

**THE FLORIDA STATE UNIVERSITY
COLLEGE OF EDUCATION**

**A LONGITUDINAL AND QUALITATIVE DESCRIPTIVE STUDY
OF CADET MORAL JUDGMENT DEVELOPMENT
AT THE UNITED STATES AIR FORCE ACADEMY**

by

CHRISTOPHER J. LUEDTKE

**A Dissertation submitted to the
Department of Educational Leadership
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy**

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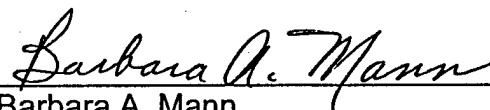
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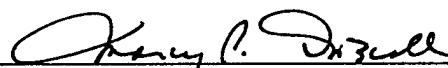
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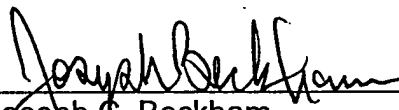
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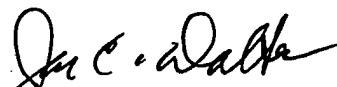
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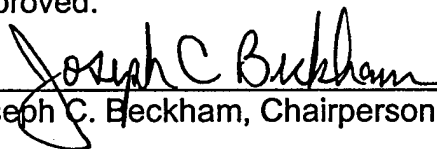


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**A LONGITUDINAL AND QUALITATIVE DESCRIPTIVE STUDY OF CADET
MORAL JUDGMENT DEVELOPMENT AT THE
UNITED STATES AIR FORCE ACADEMY**

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This study investigated the moral judgment construct. It was designed to assess the four-year, longitudinal change in moral judgment of Air Force Academy cadets in the Class of 1999 using the Defining Issues Test (DIT) and Moral Experience Questionnaire (MEQ). The objective was to observe whether changes occurred in the moral judgment scores of cadets between entry into the Academy and the spring semester of their senior year. Additional attention focused on the relationship between cadet moral reasoning and selected demographic variables of importance in the domain of moral judgment research. The study also sought to obtain cadet perspectives on the experiences that had symbolic relevance to their own individual moral judgment development. Finally, this study represented one of the initial, if not the first, doctoral dissertations to utilize James Rest's N2-index (NewIndex) in DIT research.

The longitudinal results indicated Class of 1999 cadets increased their usage of principled moral reasoning during attendance at USAFA. Longitudinal gains were observed in P-score, N2-score, stage 2 score, stage 5A score, and stage 5B score. Longitudinal losses were observed in stage 3 scores, stage 4 scores, and stage 6 scores.

Mixed results were reported with the demographic variables of interest. Group differences in DIT scores were apparent with some variables (prep school status at entry, gender at exit, GPA, entry waiver status, prior military service at entry, and leadership position at follow-up). No group differences or correlation were identified with other variables (subject attrition, age, geographic region, prep school at follow-up, gender at entry, MPA, and parent/sibling Academy graduation status).

The new DIT index (N2-score) revealed mixed findings. While N2-score outperformed P-score in certain analyses, significant group differences in P-score were identified when differences in N2-score were not detected.

The MEQ investigated cadet perceptions of moral judgment growth at the Academy. The honor code, peer and faculty interaction, the Philosophy 310 course, reflection, leadership responsibility, social interaction, discussion, and role-modeling all emerged as positive events/relationships in cadet moral judgment development. The restrictive Academy environment, peer pressure, poor role modeling, and institutional dogma emerged as key events/relationships that had a negative impact on cadet moral judgment.

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ABSTRACT

The primary focus of this study was investigation of the moral judgment construct. The study was designed to assess the four-year, longitudinal change in moral judgment of Air Force Academy cadets in the Class of 1999. The objective of this study was to observe whether changes occurred in the moral judgment scores of cadets between entry into the Air Force Academy and the spring semester of their senior year. Additional attention focused on the relationship between cadet moral reasoning scores and selected demographic variables of importance to the Air Force Academy and the domain of moral judgment research. The study also sought to obtain cadet perspectives on the types of experiences that had symbolic relevance to their own individual moral judgment development. Finally, this study represented one of the initial, if not the first, doctoral dissertations to utilize James Rest's N2-index (NewIndex) of principled moral reasoning in Defining Issues Test research (Rest, Thoma, Narvaez, and Bebeau, 1997b).

This research was designed to obtain USAFA specific insight into cadet moral judgment development during attendance at the Academy for the Class of 1999. Researchers using the Defining Issues Test (DIT) at other institutions of higher education have substantiated that the college experience does affect

moral reasoning. Unfortunately, no substantial studies had been completed at USAFA to determine how cadet moral judgment changes in the Center for Character Development era (post 1993).

The Air Force Academy believes that a focused and integrated program contributes to the development of officer candidates. The philosophy holds that given the right environment, cadets will develop an understanding of the moral values expected in the military profession. According to USAFA, "Cadets arrive at the institution at a time of their lives when they are naturally interested in questions and values...although they may not possess professional military character when they arrive here, the right institutional environment will help them develop it" (USAFA Center for Character Development, 1994, p. 2).

This research readministered the DIT to a sample of cadets in the Class of 1999. This DIT readministration provided follow-up data on the Class of 1999 which was utilized to assess longitudinal change in moral reasoning when compared with the DIT scores Class of 1999 cadets had at entry into USAFA in 1995. The follow-up DIT data, coupled with cadet demographic information and selected experiential inputs provided by cadets through the Moral Experience Questionnaire (MEQ), provided useful information on cadet moral reasoning development during attendance at USAFA.

The collective results of the thirteen research questions indicated moral judgment similarities and differences within the USAFA Class of 1999. Research question 1 indicated Class of 1999 cadets increased their usage of principled moral reasoning during their attendance at USAFA. Utilizing matched pair t-tests

of incoming and follow-up DIT scores, statistically significant longitudinal changes were realized for the DIT P-index, N2-index, and all stage scores. Longitudinal gains were observed in P-score, N2-score, stage 2 score, stage 5A score, and stage 5B score. Longitudinal losses were observed in stage 3 scores, stage 4 scores, and stage 6 scores.

Longitudinal gains in principled moral reasoning were apparent in the study. Raw gains in principled moral reasoning for the USAFA Class of 1999 were similar to other college samples. However, significant differences were observed between the entry and follow-up principled moral reasoning scores of the USAFA sample when compared to other samples. Generational effects appeared to influence the USAFA sample as they had lower entry and follow-up DIT scores than most college samples.

The gains in principled moral reasoning indicated a distinct shift from conventional moral reasoning to principled moral reasoning. The less dramatic shift observed in this study could likely be attributed to the law and order Academy environment and its similarity to stage 4 moral judgment.

Mixed results were reported for the quantitative portion of the study with relationship to the demographic variables of interest. Group differences in DIT scores were apparent with some variables (prep school status at entry, gender at exit, GPA, entry waiver status, prior military service at entry, and leadership position at follow-up). No group differences or correlation were identified with other variables (subject attrition, age, geographic region, prep school at follow-up, gender at entry, MPA, and parent/sibling Academy graduation status).

No significant group differences were observed for research questions 2 (attrition code), 3 (age), and 4 (geographic region). Analysis of research question 5 (preparatory school status) indicated non-prep school cadets scored higher as a group on entry DIT N2-score than prep school cadets. No prep school status group differences were observed on entry DIT P-score, follow-up DIT P-score, or follow-up DIT N2-score.

Analysis of research question 6 (gender) utilized independent sample t-tests. Results indicated no significant gender differences on entry DIT P-score or N2-score. Significant gender differences were observed on follow-up DIT P-score and N2-score with females scoring higher than males. Some aspect(s) of the Academy program appeared to have a greater influence on the shift toward higher levels of principled moral judgment for female cadets in the Class of 1999.

Correlation was utilized to assess research questions 7 (MPA) and 8 (GPA). No significant relationships existed between MPA and DIT P-score/N2-score. A statistically significant correlation existed between DIT N2-score and GPA, however, no relationship existed between DIT P-score and GPA.

Analysis of research question 9 (parent and sibling Academy graduation status) revealed no significant group differences. Research question 10 (entry waiver status) indicated that non-entry waiver cadets as a group scored higher on entry DIT N2-score, follow-up P-score, and follow-up N2-score than the entry waiver group of cadets. No significant group differences existed on entry P-score.

Research question 11 (prior military service status) indicated that non-prior service cadets scored higher as a group on entry P-score and N2-score than prior service cadets. No significant group differences existed on follow-up P-score or N2-score.

Research question 12 (leadership status) revealed that cadets in leadership positions scored higher as a group on follow-up N2-score than cadets not occupying leadership positions. No significant group differences existed on follow-up P-score.

The inclusion of the new DIT index (N2-score) provided an opportunity for research comparisons with the traditional P-index. Mixed results were discovered. While N2-score outperformed P-score in certain analyses, significant group differences in P-score were identified when differences in N2-score were not detected. Continued research of this relationship is necessary.

Research question 13 utilized the Moral Experience Questionnaire (MEQ) to investigate cadet perceptions of moral judgment growth at the Academy. The honor code system, peer and faculty interaction, the Philosophy 310 core course, reflection, leadership/decision responsibility, social interaction, discussion, and role-modeling all emerged as positive events/relationships in cadet moral judgment development. The restrictive Academy environment, peer pressure, poor role modeling, and institutional dogma emerged as key events/relationships that had a negative impact on cadet moral judgment growth.

Moral judgment comparisons of the USAFA Class of 1999 with other college samples revealed similarities and differences. USAFA cadets are just

like other college-aged cohorts in their shift from conventional to principled moral judgment during college attendance. Cadets were also similar to other college samples in the types of significant moral judgment experiences they identified on open-ended questionnaires. Unlike the majority of college DIT samples, differences in DIT scores by gender were apparent in the USAFA sample. Additionally, the USAFA honor code emerged on the MEQ as a significant moral experience for cadets. No other researchers have identified an institutional honor code as a significant moral influence on previous experiential questionnaires. It appears that the USAFA honor code does encourage cadets to reflect about moral issues.

While this study responded to 13 research questions, a number of ideas for future research emerged. Further research is necessary to evaluate the N2-index in DIT research. Continued comparison of P-scores and N2-scores will provide a solid body of evidence to determine which index is a better indicator of principled moral reasoning.

While this study clearly indicated a shift from conventional to principled moral judgment for the Class of 1999, reduced levels of principled moral judgment were identified at entry and exit when compared to college samples from other studies. Replication of this study is necessary with other USAFA classes to determine if the lower entry and follow-up DIT scores are unique to the Class of 1999.

Since DIT gender differences in college samples are not a common occurrence, the gender differences identified in this study pose new questions.

Class of 1999 female cadets entered USAFA with similar DIT scores to their male counterparts. After four years of Academy attendance, females had significantly higher DIT P-scores than male cadets. It appears that something in the Academy program affects females differently than males contributing to a greater shift in principled moral reasoning. Future gender research is necessary in unique college settings to determine if gender differences are related to type of higher education institution.

Further research of leadership role-taking opportunities is necessary. The small sample size realized for investigation of this variable at the Academy led to tentative conclusions. Utilization of larger sample sizes would be beneficial along with pre- and post-test closer to the intervention.

This study was not designed to identify statistical relationships between MEQ-identified experiences and cadet DIT scores. Future Academy research should employ both instruments utilizing a methodology that allows for matching of responses.

Finally, more detailed analysis of the effects of the conservative Academy environment are necessary. Future USAFA researchers need to conduct experimental studies which provide closer investigation of environmental influences in moral judgment development.

Moral judgment development at the USAF Academy remains a complicated construct. The intent of this study was to provide insight into cadet development of principled moral judgment and important moral reasoning experiences. The results of this study will be useful to researchers and Academy

officials as they continue to pursue ways of enhancing development of moral judgment during the college experience.

CHAPTER 1

INTRODUCTION

Problem

From its earliest beginning in colonial America, higher education in the United States has had a role in the moral development of its students. An educational system founded in the Christian tradition was bound to combine intellectual development and moral development as inseparable requirements for a spiritually enlightened graduate (Rudolph, 1990). According to Rudolph, the early American college had developed an “impressive arsenal of weapons for making men out of boys” (Rudolph, 1990, p. 140). One of these influences was a senior level core course that was commonly taught by the college president. This final capstone course focused on moral and intellectual philosophy. Rudolph described how the college president’s powerful stature and the moral philosophy course was considered “essential to the formation of true character” in the students (p. 140).

As time progressed, higher education moved away from its focus on morality in favor of scientific inquiry in intellectual development. The Morrill Federal Land Grant Act of 1862 signaled a transition in higher education from a focus on the elite to a focus on the masses. Along with this transition came a more stringent focus on academic and intellectual standards. These transitions resulted in less collegiate concern over the character development of the pupils. By 1869, Harvard had eliminated character considerations in ranking students (Rudolph, 1990, p. 348). Throughout higher education, the senior capstone course in moral philosophy was dismantled.

Today, higher education is experiencing a renewed focus on issues related to the moral and ethical development of students. Institutions are revisiting their roles in the moral development of students. Florida State University recognized this outcome by stating that "through educational experiences, one can come to a clearer understanding of the complex moral issues inherent in human life and can develop the knowledge and skills for effective and responsible participation in the world" (FSU 1997-1999 General Bulletin, 1997, p. 9). Florida State University has also taken the lead in inquiry into character development in college by sponsoring an annual institute on college student values. Additionally, in recognition of the growing interest in character development in higher education, the John Templeton Foundation recently began sponsoring an annual honor roll of character-building colleges and universities to recognize institutions and programs that promote character

development (John Templeton Foundation, 1997).

What some higher education institutions are seeking to reclaim is what the Air Force Academy has attempted to do since graduating its first class in 1959--producing graduates with the knowledge and character to be productive citizens. Throughout its history, USAFA has maintained a primary mission focus on the character development of its students. The philosophy of USAFA character development prior to 1993 utilized a balanced program of military, academic, and athletic activities under an institutional honor code where character was thought to be a natural by-product.

In 1993, it became evident to Academy officials that the basic character values of incoming students did not meet expectations (Thomas, 1993). USAFA officials worried that incoming cadets did not have a clear or common foundation of moral and ethical values--values functionally required of Air Force officers. In recognition of this perceived problem, the Academy created the Center for Character Development to oversee the character development program for cadets and have a more direct and programmatic impact on their moral development.

The ability to reason through moral/ethical issues was identified as an important component of the USAFA Character Development Program during a 1993 Gazette Telegraph interview with then Commandant of Cadets General Patrick Gamble (Thomas, 1993). General Gamble indicated that the Academy intended to break character development into its lowest common denominators

and influence those denominators over the four years of Academy attendance. USAFA Instruction 36-158, dated 19 October 1995, further states that "Character development is the core of the Academy experience."

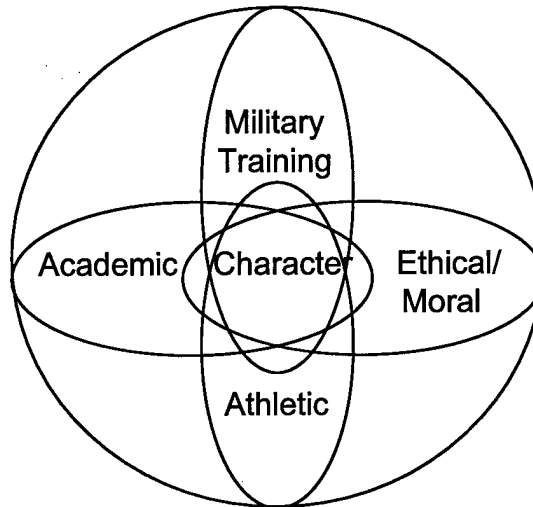


Figure 1: Relationships among Mission Elements at the Air Force Academy

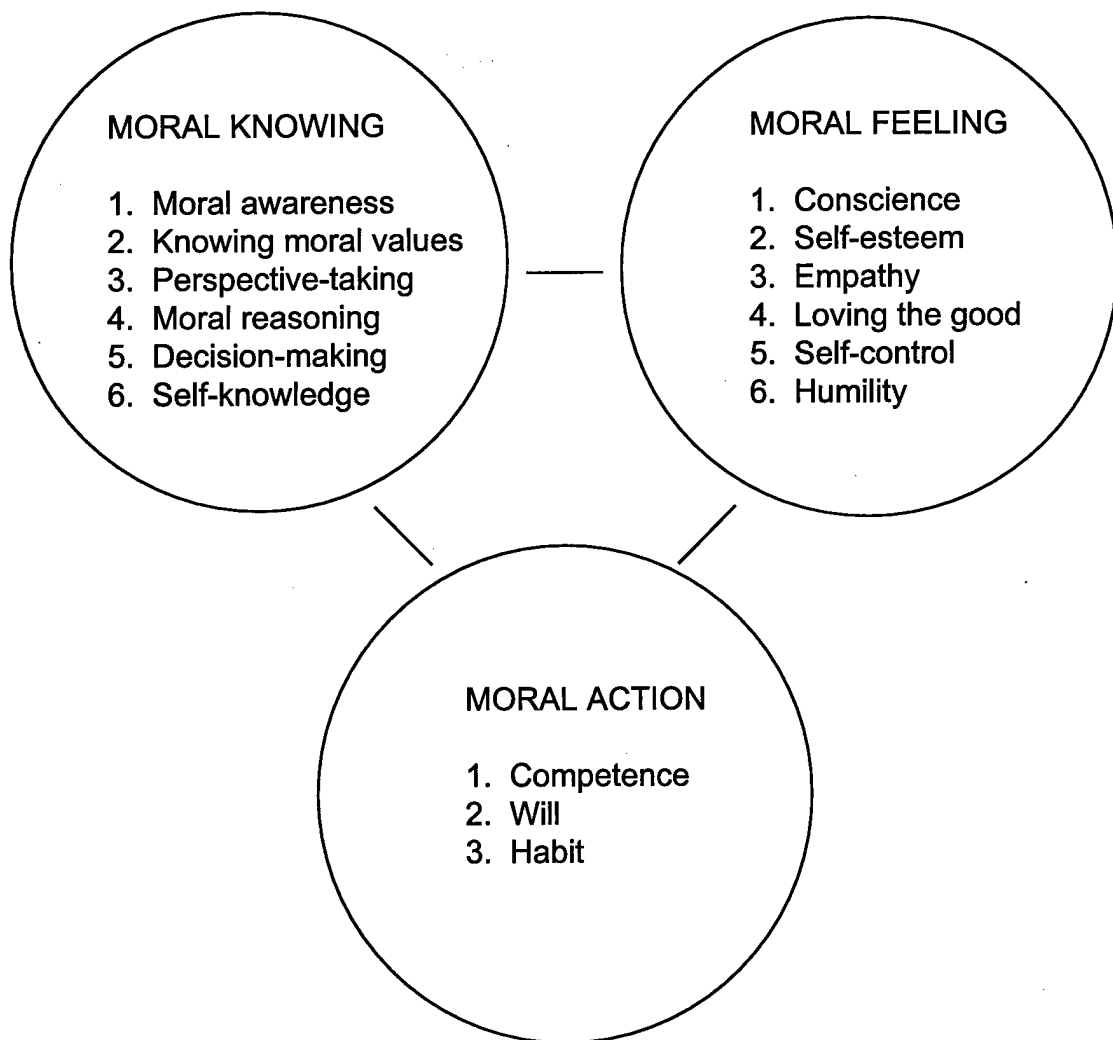
The USAF Academy Character Development Manual highlights the importance that character development plays in the professional development of the cadets. Figure 1 represents the central position that character development has in the entire USAF Academy mission. The military, academic, athletic, and character development programs are integrated to place emphasis on the values development of officer candidates. Prior to 1993, character development outcomes were not identified separately in the Academy program--character development was thought to be a natural and unstated by-product of the rigors of

military, academic, and athletic cadet programs. The new USAFA model illustrates the "relationship among mission elements at USAFA...sharing a common mission of being in the human development business with programs designed specifically to develop officers who will serve their country and the Air Force." "At the core of these programs is character development--it pervades the cadet experience" (USAFA Center for Character Development, 1994, introduction).

USAFA believes that a focused and integrated character program contributes to the development of officer candidates. The philosophy holds that given the right environment, cadets will develop an understanding of the moral values expected in the military profession. According to USAFA, "Cadets arrive at the institution at a time of their lives when they are naturally interested in questions and values...although they may not possess professional military character when they arrive here, the right institutional environment will help them develop it" (USAFA Center for Character Development, 1994, p. 2).

Utilizing the works of Thomas Lickona (1991), the Academy further defines good character as having three interrelated parts: moral knowing, moral feeling, and moral behavior (USAFA Center for Character Development, 1994, p. 17). USAFA wants to graduate officers who can judge what is right, care deeply about what is right, and then do what they believe to be right. Figure 2 depicts the components of good character that the USAF Academy adopted from Thomas Lickona. The philosophy calls for the interrelationship of the cognitive

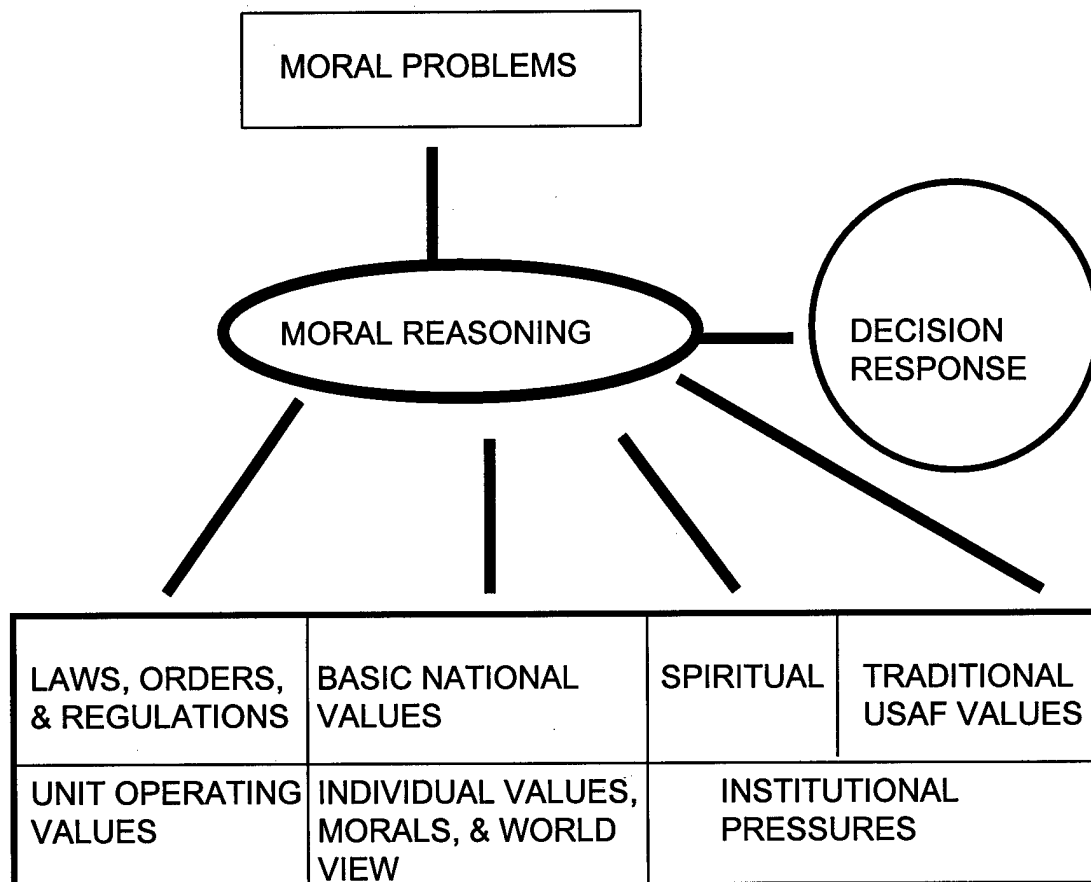
component of moral knowing, the affective component of moral feeling, and the behavioral component of moral action. Good character is thought to be present when these three components work together to do the right thing for the right reason (USAFA Center for Character Development, 1994, p. 21).



(USAFA Center for Character Development, 1994, p. 21)

Figure 2: Components of Good Character

The overall objective of this research is to focus specifically on the cognitive component identified through moral knowing. Figure 2 indicates the central feature of moral knowing is moral reasoning/judgment (the construct this study was designed to investigate). When reasoning through a moral dilemma, there are a number of issues that affect an individual's judgment. Figure 3 represents many of the issues that are thought to affect a cadet's moral judgment as he/she confronts moral problems (USAFA Center for Character Development, 1994, p. 44).



(USAFA Center for Character Development, 1994, p. 44)

Figure 3: Moral Decision-Making at USAFA

Individuals must contend with laws and regulations governing the issue, institutional pressures and norms, personal values, views, and experiences and a host of other conflicting influences. A Moral Experience Questionnaire (MEQ) is included in this study to capture cadet perspectives of the experiences that had an impact on their moral reasoning development.

Throughout this description of USAFA's 1993 attempt to establish a focused Character Development Program, no mention has been made of any attempts to evaluate or analyze cadet moral judgment under the new program. While it professes an interrelated and programmatic attempt to contribute to cadet moral development, no analysis of any of the components of the USAFA Character Development Program has been conducted since the 1993 redesign. This lack of evaluation has been a concern of Academy officials. In a recent 1997 Gazette Telegraph, Colonel Mark Hyatt, Director of the USAFA Character Development Center, expressed the need for tangible evidence indicating that the Academy is making a difference in cadet character development (Pearce, 1997). Lack of evaluation of character education programs has also captured the attention of scholars in the field of moral development research.

One scholar who has kept a close eye on moral development research is Lisa Kuhmerker, founder of the Moral Education Forum and chairperson of the Dissertation Awards Committee of the Association for Moral Education. She states that "the most urgent need is for descriptions and evaluations of character education programs that are currently in schools" (Kuhmerker, 1995, p.3).

Kuhmerker, in recognition of the influx of professed character education programs being touted by higher education institutions, called for empirical studies to analyze the programs.

Kuhmerker also recognized the military's initiative and leadership in the area of character education programs. Importantly, however, she called for further inquiry into moral education in the military training environment with specific interest in the values the military is trying to inculcate in recruits-- suggesting research be conducted to reveal how recruits interpret the values training they receive. She stated, "In a democracy where the military is under the direction of a civilian government structure, civilians have an obligation to inform themselves about the values taught in their military institutions" (Kuhmerker, 1995, p. 6). In order to investigate Kuhmerker's concerns, a Moral Experience Questionnaire (MEQ) is included in this study to obtain USAFA cadet inputs on the experiences they deem important in their moral reasoning development.

Whether intentionally related to Kuhmerker's concerns or not, the Air Force Academy established the groundwork for analysis of the moral reasoning/moral judgment component of the USAFA Character Development Program. In the summer of 1995, the Academy administered the Defining Issues Test (DIT) to nearly all incoming cadets in the USAFA Class of 1999 (1,299 cadets completed the DIT out of a population of 1,340 cadets). While USAFA had taken the initiative to evaluate selected components of the Character

Development Program, no analysis of the incoming DIT scores was conducted and no comprehensive follow-up was conducted. Until this researcher requested access, the raw incoming DIT data on the Class of 1999 sat in Academy archives awaiting empirical analysis.

The only published studies concerning moral judgment research in the military academy environment were the works of Bridges and Priest (1983) and Rice (1986). While both of these studies hint at Kuhmerker's concerns, they pre-date the current programmatic character development program at the Academy.

While researched and published prior to Kuhmerker's 1995 article calling for research into military character education programs, Rice's study attempted to address some of Kuhmerker's concerns through a quasi-experimental and descriptive study of cadet moral development (Rice, 1986).

Of importance to this research proposal was the descriptive portion of Rice's study in which he compared the moral reasoning of a limited sample of cadets from the classes of 1985-1988. Rice secured 30 volunteers from each cadet class who would complete the DIT during their free time.

The cross-sectional study failed to identify any significant differences in moral reasoning based on class year or gender. Senior cadets had a mean DIT P-score of 42.7, juniors had a mean of 42.7, sophomores had a mean of 39.1, and freshmen had a mean of 41.3. Male cadets in the total cross-sectional sample had a mean P-score of 41.5 and females had a mean P-score of 41.3 (Rice, 1986, pgs. 136-137).

Unfortunately, Rice limited his sample to thirty members from each cadet class (each class represents a population of approximately 1,000 to 1,500 cadets). Common sampling techniques (for ANOVA and ANCOVA analysis) for populations of this size indicate that inadequate power is a serious threat to the validity of statistical conclusions in a study. Consequently, Rice's study lacked sufficient sampling (quantity and randomness) to obtain useful and reliable data representative of the larger class populations--this likely contributed to his inability to determine statistically significant differences in cadet moral reasoning. Calculations indicate Rice needed larger samples from each cadet class and randomization of samples to have adequate statistical power (Tate, 1996).

Another study which focused on cadet moral judgment development was conducted at the United States Military Academy (West Point) from 1977 to 1981 (Bridges and Priest, 1983). One component of this study was the longitudinal change in cadet moral reasoning (as measured by the DIT) from entrance to graduation for the USMA Class of 1981.

Bridges and Priest administered the Defining Issues Test (DIT) to Class of 1981 cadets upon entry into USMA and prior to graduation in order to analyze longitudinal change in cadet moral judgment. The study indicated that the class mean usage of principled moral reasoning increased from a P-score of 36 (36 percent usage of principled considerations) at USMA entry to a P-score of 43 (43 percent usage of principled considerations) just prior to graduation. Bridges and Priest compared these P-scores to 32 for a large group of high school seniors

and 42 for college students in general (Bridges and Priest, 1983, p. vii; Rest, 1979).

Bridges and Priest did recognize that one of the limitations of their study was the changed conditions of the DIT administrations over time. At entry into USMA, cadets were administered the DIT in a large academic setting. Cadets who completed the DIT as seniors did so as out-of-class homework for a leadership class. They subsequently turned in the instrument during a regularly scheduled class. The researchers suspected that the out-of-class administration may have resulted in subjects spending more time reflecting on the instrument.

In their conclusion, Bridges and Priest recognized that the developmental pattern of principled moral reasoning by cadets in the USMA Class of 1981 was typical of general college students. With the USMA stated objective of fostering individual moral judgment development, Bridges and Priest voiced concerns that cadet moral reasoning development should surpass other groups of college educated people (Bridges and Priest, 1983, p. 42). The researchers suggested that a "controlling" environment (military academy) with a mission of character development should have a greater influence on student moral reasoning. While expressing concern over the "typical" moral judgment development of USMA cadets when compared to other higher education environments, the researchers confounded their conclusions by also expressing alarm that students decreased in their rated importance to obedience to the law. While Bridges and Priest were expecting higher and more rapid gains in the usage of principled moral

reasoning, they were alarmed that the conventional level of moral reasoning (focus on obedience to the law) declined during the study.

The conflicting concerns that Bridges and Priest identified suggests that military academies constitute a difficult environment with confounding influences affecting cadet moral judgment development. On the one hand, the institutional focus on character development suggests a more focused intervention that should increase the usage of principled moral reasoning. On the other hand, the disciplinary and organizational requirements of the military environment suggest artificial constraints to a transition from conventional to principled moral reasoning.

The Air Force Academy's own recognition of the need to assess the many components of its character development program, the calls for research of military character education programs by scholars in the field of moral development, and the lack of current moral reasoning research relevant to the Air Force Academy create the need for further investigation. This study was designed to support analysis of the moral reasoning component of the Academy's Character Development program and the relationship of selected demographic variables to cadet moral judgment. The Defining Issues Test was utilized based on its validity and reliability as an instrument measuring the construct of moral reasoning. Additionally, the Defining Issues Test was selected as a follow-up instrument based on USAFA's utilization of the instrument with Class of 1999 cadets during initial data collection.

A collection of demographic, experiential and affective variables have been researched in relationship to moral reasoning over the past thirty years. A literature review of the moral judgment construct indicates that there are large numbers of demographic variables and experiences associated with moral judgment development during the college years. The current state of empirical evidence concerning selected demographic variables and experiences indicates that further research is necessary with relationship to moral judgment, especially in the military academy environment.

The literature review conducted by this researcher indicated that disagreement still exists concerning many variables commonly associated with moral judgment development. The literature review also provides the justification for the selection of certain demographic variables and college experiences for further research at USAFA.

The limitations associated with earlier studies (Bridges and Priest, 1983 and Rice, 1986), the more recent changes in the deliberate character development program, and the ongoing debate associated with variables in moral development research, indicated that investigation of the current state of cadet moral development, and college student moral development in general, was required. No extensive empirical studies have been published which investigate cadet moral development under current institutional conditions. Comprehensive longitudinal research of student moral reasoning would provide character development insight to Academy officials and contribute to the ongoing

body of research associated with the influence of college on student moral judgment development.

Purpose of the Study

The primary focus of this study is investigation of the construct moral judgment, which is also referred to in the literature as moral reasoning. This study investigates Class of 1999 cadet moral judgment at the United States Air Force Academy (USAFA).

Taken together, the historically recent creation of a focused and programmatic character education intervention program at the Air Force Academy, the lack of any programmatic evaluation, the call for research into military character education programs by Kuhmerker, and the outdated nature of moral reasoning research in the military academy environment all combine to form the research problems that this study is designed to answer. This research investigated these concerns by providing timely empirical evidence of changes in cadet moral reasoning during attendance at the Academy, determining relationships between cadet moral reasoning and demographic variables, and identifying the experiences cadets perceive aided or restricted their moral development.

The benefit of this moral development research to the Academy is the analysis and closure it provides to an ongoing project. The Academy collected moral judgment research on incoming cadets when the class of 1999 entered in

the summer of 1995. The interest and responsibility for this research has shifted a number of times since the inception of DIT administration in 1995. No comprehensive follow-up was conducted to determine what changes in cadet moral judgment occur at selected points in the Academy program. This research filled the void by readministering the Defining Issues Test to cadets in the Class of 1999. This follow up administration (to the initial DIT data collected on the Class of 1999 cohort during basic training) facilitated analysis of changes in cadet moral reasoning development. As a result of this research, Academy officials now have access to longitudinal analysis of cadet moral reasoning resulting from almost four years of Academy attendance (class of 1999). This study provided insight into the cumulative effect of the four years of Academy attendance.

An additional intent of this study was to further the body of moral judgment research through investigation of the cognitive component of moral judgment. Utilization of the Defining Issues Test (DIT) at the Air Force Academy provided descriptive and relational information concerning cadet moral judgment development and the USAFA officer development program. With a stated mission to produce future Air Force officers with a foundation of moral and ethical character, the Academy has divided its character development program into the components of moral feeling, moral knowing, and moral action. This research focused on the moral knowing component with moral judgment as its foundation. The DIT was chosen for inclusion in this study based on its validity

and reliability and because USAFA already utilized the instrument with incoming Class of 1999 cadets.

The purpose of this descriptive, longitudinal study was to investigate the moral judgment of Air Force Academy cadets in the Class of 1999 by exploring the relationship between cadet moral judgment scores on the DIT and selected demographic variables, change in cadet moral judgment scores from entry into USAFA to the second semester of the senior year, and discovering what importance cadets perceive Academy experiences play in their moral judgment development (Moral Experience Questionnaire). The open-ended Moral Experience Questionnaire (MEQ) was designed specifically for this study out of Kuhmerker's concerns for capturing recruit interpretations of their values training. Additionally, the MEQ was intended to capture information that could be analyzed in comparison to the experiences USAFA puts forward in its model of moral decision-making (Figure 3).

Research Questions

The research questions for this study were derived from the literature concerning college student, moral judgment development and the unique mission objectives of the Air Force Academy. The research questions and their corresponding null hypotheses represent the demographic variables, experiences, and Academy populations identified for inclusion in the present study.

1. Are there longitudinal changes in cadet moral judgment from entry into USAFA to completion of the 4th year (Class of 1999 cohort) of Academy education? This question will investigate changes in overall P-score, N2-score, or stage scores using the DIT.

Null Hypothesis 1: There are no longitudinal changes in cadet moral judgment scores from entry into USAFA to completion of the 4th year (Class of 1999 cohort) of Academy education (DIT P-score, N2-score, or stage scores).

2. Is there a relationship between moral judgment at entry (entry DIT) and completion/non-completion of 4 years of Academy education (Class of 1999) with relationship to Honor Violation (lying, cheating, stealing, tolerating), Conduct, Academic, Athletic or Self-Initiated Elimination (SIE) dismissals?

Null Hypothesis 2: There are no group differences in moral judgment at entry (entry DIT scores) with relation to completion/non-completion of Academy education (Class of 1999). This hypothesis delineates groupings by completion and attrition status further delineating attrition status by attrition reason with relationship to Honor Violation (lying, cheating, stealing, tolerating), Conduct, Academic, Athletic or Self-Initiated Elimination (SIE) dismissals.

3. Can differences in moral judgment development be distinguished by the age of the cadet for the Class of 1999?

Null Hypothesis 3: There will be no age group differences in moral judgment (DIT score) for Class of 1999 cadets at entry or during their senior class year.

4. Can differences in moral judgment development be distinguished by U.S. region of parental domicile for cadets in the Class of 1999?

Null Hypothesis 4: There will be no geographic group differences in cadet moral judgment (DIT score) at entry based on geographic region of cadet's parental domicile.

5. Can differences in moral judgment development be distinguished by Prep School attendance status for cadets in the Class of 1999?

Null Hypothesis 5: There will be no group differences in moral judgment (entry and follow-up DIT scores) between cadets who attended the USAFA Prep School and those that did not.

6. Can differences in moral judgment development be distinguished by cadet gender for students in the Class of 1999?

Null Hypothesis 6: There will be no group differences between cadet moral judgment (entry and follow-up DIT score) and cadet gender.

7. Can differences in moral judgment development be distinguished by cadet MPA for students in the Class of 1999?

Null Hypothesis 7: There will be no correlation between cadet moral judgment (follow-up DIT score) and military performance average (MPA).

8. Can differences in moral judgment development be distinguished by cadet GPA for students in the Class of 1999?

Null Hypothesis 8: There will be no correlation between cadet moral judgment (follow-up DIT score) and grade point average (GPA).

9. Can differences in moral judgment development be distinguished by military academy graduation history of the cadet's parents or siblings for Class of 1999 members?

Null Hypothesis 9: There are no group differences in cadet moral judgment (entry and follow-up DIT score) with relationship to the military academy graduation status of a cadet's parents or siblings.

10. Can differences in moral judgment development be distinguished by entrance waiver status for cadets in the Class of 1999?

Null Hypothesis 10: There are no group differences in cadet moral reasoning (entry and follow-up DIT score) with relationship to entrance waiver status.

11. Can differences in moral judgment development be distinguished by a cadet's prior military service status for students in the Class of 1999?

Null Hypothesis 11: There are no group differences in cadet moral reasoning (entry and follow-up DIT score) with relationship to prior military service history.

12. Are there differences in senior class (Class of 1999) cadet moral reasoning (DIT scores) based on senior class, leadership position status/experience?

Null Hypothesis 12: There are no group differences in cadet moral reasoning (follow-up DIT score) with relationship to senior leadership position status.

13. What USAFA and non-USAFA experiences do cadets in the Class of 1999 cohort identify as contributing to or restricting their moral judgment development during the four years of Academy attendance?

Hypothesis 13: Cadet responses on the MEQ will indicate that USAFA programs and courses directed at ethical and moral growth and living under the Academy Honor Code provided the most stimulus to their moral development.

Significance of Research

This research is relevant to the USAFA character development mission and the continuing empirical investigation of the impact of higher education on individual moral judgment development. USAFA will use this descriptive study to obtain insight into its professed character development program and how it affects/fails to affect cadet moral judgment development. Empirical results provide up-to-date assessment of the moral reasoning component of the current character development program, which was overhauled in 1993. This research

also replaces the incomplete and ungeneralizable information that was collected on cadet moral reasoning in the mid-1980s (Bridges and Priest, 1983 and Rice, 1986).

This research also contributes to the continuing investigation of the domain of moral development and empirical research using the DIT. While some of the variables are unique to the USAFA environment, many others have provided mixed results in DIT research. USAFA provides a unique opportunity to empirically investigate and report on variables common to the moral judgment domain. The research also provided one of the first empirical opportunities to compare the newly identified DIT "new index" (N2) with the traditional P index in a doctoral dissertation (Rest, Thoma, Narvaez & Bebeau, 1997b).

Finally, the use of an open-ended experiential questionnaire provides the subjects' perspective of what higher education experiences they perceive aided to or limited their moral judgment. The interactions identified by the subjects provide detailed descriptions of the experiences that had the greatest positive and negative impacts on their moral reasoning development. The Academy and other institutions of higher education can use these experiential results to manipulate interventions to have a greater positive effect on cadet/student moral judgment growth.

Limitations and Assumptions

By its very nature, character education is a broad-based philosophy with differing opinions as to what constitutes character development. This study focuses on the Air Force Academy's adoption of Thomas Lickona's Components of Good Character which include moral knowing, moral feeling, and moral action. Further discussion in Chapter 2 indicates how Lickona's three components compare favorably with Rest's (1986) four component model of moral development. This study investigates only one portion of Lickona's components of good character (moral knowing--moral judgment). Similarly, this study's focus on moral reasoning means that it can only be related to Rest's second component on moral judgment and his third component on moral choice. Any attempt to generalize the results of this moral judgment research to include moral empathy or moral behavior would be improper.

This research was also designed to be a long range comprehensive study of how cadet moral reasoning changes over four years of Academy attendance for the Class of 1999. Since it focuses on the longitudinal changes in moral reasoning over four years, one cannot expect to form clear causal interpretations. Further analysis of cadet moral reasoning in relationship to selected demographic variables was intended to identify key relationships that could be incorporated into further character development program revisions. Collection of cadet inputs identifying key moral judgment experiences was also intended to suggest other relationships that may have a profound influence on

cadet moral reasoning development.

This research also utilizes institutional data concerning incoming cadet, moral reasoning scores on the DIT and databases containing demographic information on each cadet in the Class of 1999. It is important to understand that the information contained in these archives must be considered carefully to ensure that it is an accurate depiction of the requested information. Institutional data representing the key variables identified for this research were maintained in the Academy archives and were retrieved through institutional cooperation and electronic means. Information obtained on the individual students includes demographic data, academic information, military performance scores, and conduct and honor violations--informed consent from each subject was obtained for access to personal information. Archival data is appropriate when data pertinent to the research already exists, as long as the researcher considers that any biases that occurred during initial data collection affects the current research (McBurney, 1990).

Additionally, this research focuses solely on the USAFA Class of 1999. The analyses and conclusions of this study only apply directly to the USAFA Class of 1999. It is important to point out, however, that demographic and programmatic similarities between the USAFA Class of 1999 and future classes suggest that the conclusions of this study are generalizable to other Academy classes. What the reader needs to keep in mind is that generational effects (Rest, 1979) will slowly limit the generalizability of these results over time. Key

generational events that may have contributed to the moral judgment of subjects involved in this study will likely be different for future USAFA classes.

Finally, the researcher and reader need to be careful in generalizing the Class of 1999 experiential results obtained through the Moral Experience Questionnaire (MEQ). The cadet inputs obtained with the MEQ represent symbolic experiences that Class of 1999 cadets deemed relevant to their moral reasoning development. As such, they represent perceptions that are laced with generational influences. Although each cadet class is typically similar in demographic make-up and each cadet class completes a similar institutional program, small programmatic changes can have a significant effect. Additionally, the MEQ was designed to collect cadet inputs covering the four year Academy program. Since Class of 1999 cadets are completing the MEQ as seniors, their attention to experiences covering the entire four-year program might be overcome by more recent and fresher memories of experiences.

Definition of Terms

There are a number of Academy-specific terms with which general users of these research findings may be unfamiliar. The following terms are defined to provide clarification to the reader.

Cadet: College students that attend the U.S. Air Force Academy receive the title cadet. They are similar to other college-aged populations in that they attend their institution on a four-year system of freshmen through senior classes.

While admittedly representing a very selective group of college-bound students based on Academy entrance requirements and the need for a congressional, presidential, or vice-presidential nomination, Academy cadets are much like other college students in their academic and social experiences. The title cadet has been used throughout American military history to denote an individual that is undergoing extensive training to enter the commissioned officer corps. Early students of the flying corps were titled cadets until they passed their flying training.

Military Performance Average (MPA): This is a measure of cadet military performance on a four-point scale similar to grade point average. Cadets are rated on the performance of their assigned military duties and roles by senior ranking cadets and active duty officers.

Cadet Wing: The Cadet Wing represents the entire student body of freshmen, sophomore, junior, and senior cadets. The wing structure is designed to mirror actual organizational considerations of active duty Air Force units. The Cadet Wing structure consists of four cadet groups with each group containing ten cadet squadrons. Each cadet squadron contains approximately 110 cadets from all four class years. Each cadet group contains approximately 1,000 cadets from all four class years (10 squadrons). The Cadet Wing contains approximately 4,000 cadets. As a student body, the Cadet Wing represents a more traditional college undergraduate cohort of 17 to 25 year olds. Entry age is restricted to students 17 to 21 years old. Non-traditional student representation

is little to non-existent due to age restrictions and other screening considerations.

Military Art & Science (MAS): Represents one of the largest core academic requirements at the Academy. Sophomore through senior cadets must complete core courses in military theory, officership, airpower theory, and joint and combined operations. Since these are core courses for the respective cadet classes, half of the cadet class completes the course during the fall semester and the other half of the class completes the course during the spring semester. For example, senior cadets must complete MAS-440 during their senior year to be eligible for graduation. The USAFA Registrar randomly assigns students to semesters and sections. This study specifically utilized the half of the senior class cadets that took MAS-440 during the Spring 1999 semester.

MAS-472: This course is a core substitute for MAS-440 for selected senior cadets. The only cadets allowed to take MAS-472 are the forty-five senior cadets that are in the formal leadership roles of Wing (1), Group (4), and Squadron (40) commanders. This course was utilized to see whether cadets in leadership positions differed in moral judgment from senior cadets who have not served in these positions.

Leadership Roles: Leadership roles are part of the developmental process at the Academy. As freshmen, cadets work on followership roles and slowly develop into leaders of the Cadet Wing when they become the senior class. While there are numerous informal leadership roles and lower-level formal roles, 45 high-level formal leadership roles are identified each semester. Senior

cadets serve in these leadership roles as the Wing (1), Group (4), or Squadron (40) commanders. These semester-long roles are thought to contribute to cadet development. General leadership roles have been recognized in moral development literature as having a relationship with increased moral reasoning.

Disenrollment: Over the four years of Academy attendance, a cadet could be disenrolled from the institution for a number of reasons. These disenrollment reasons include violations of the Academy honor code, behavior/conduct problems, academic dismissal, medical dismissal, athletic dismissal, death, and self-initiated elimination.

Waiver: All cadets that are admitted to the Air Force Academy do not meet entrance requirement minimums (academic, athletic, medical, etc.). In cases where a student is admitted to USAFA, but did not meet entrance requirements, they receive an entrance waiver.

Prep School Status: The Air Force Academy operates a one-year preparatory school for selected candidates that failed to meet entrance requirements. Candidates that agree to attend the preparatory school undergo a one-year program, which focuses on raising their performance standards to meet USAFA entrance requirements. Large numbers of the students that complete the preparatory school program are admitted to the Academy the following year.

Prior Military Service: While most of the cadets who enter the Academy each year do so directly after high school graduation, some cadets enter the Academy after serving on active military duty as enlisted members. Cadets with

prior military service often outperform their classmates in military-related topics.

Geographic Region of Parental Domicile: Reflects the geographic location from which the cadet entered the Academy. Each cadet must receive either a presidential or congressional nomination to be considered for attendance. The Academy enrolls cadets from throughout the United States and its territories.

Academy Graduation Status of Cadet Parents: The Air Force Academy did not graduate its first class until 1959. In recent years, USAFA has begun to enroll second generation Air Force Academy cadets. These cadets are tracked with an identifier to determine whether they differ from cadets whose parents did not graduate from the Air Force Academy. A variant of this variable also involves including academy graduation of cadet siblings to determine if lateral relationships exist.

CHAPTER 2

REVIEW OF THE LITERATURE

This study was designed to assess the four year, longitudinal change in moral judgment of Air Force Academy cadets in the Class of 1999. Additionally, the relationship between cadet moral judgment and selected demographic variables was analyzed. Finally, analysis of cadet-identified moral reasoning experiences was conducted to ascertain what interventions affect moral judgment either negatively or positively.

While a review of the literature indicates that a number of studies analyzing moral judgment in the college environment have been conducted, few have focused on the unique military academy environment of higher education. The few studies that have focused on moral judgment in military academies either did not answer the questions that this study focused on or were outdated or invalidated due to generational effects.

Moral reasoning research in the multitude of institutions that represent the environment of higher education indicates that college students in general develop moral reasoning skills over four years of college attendance (Pascarella

and Terrenzini, 1991). Different college environments and interventions have had differing effects on college student moral reasoning. This research applied the current literature to the Air Force Academy environment with its recognized focus on character development.

The purpose of this review of the literature is to identify the key components of moral judgment research related to this study. The contributions of the early researchers that established moral judgment as an empirical construct will be identified, however, most attention will focus on the more recent contributions of Dr. James Rest. The review will also present evidence of the utility of longitudinal studies in moral reasoning research. The importance of experiential questionnaires and interviews will be discussed to support the need for student interpretations of the events and experiences that they perceive impacted their moral reasoning development. Finally, the literature review will identify and support the relational variables chosen for inclusion in the present study.

My intention is to further this body of research by using Rest's Defining Issues Test (DIT) and a Moral Experience Questionnaire (MEQ) at the U.S. Air Force Academy to provide descriptive and relational information concerning cadet moral judgment development and the USAFA officer development program. With a stated mission to produce future Air Force officers with a foundation of moral and ethical character, it was imperative that assessment of student moral reasoning at the Academy be undertaken.

The purpose of this descriptive, longitudinal study is to investigate the moral judgment development of U.S. Air Force Academy cadets by exploring the longitudinal change in moral reasoning scores, the relationship between cadet moral judgment scores on the Defining Issues Test and selected demographic variables, and cadet interpretations of selected Academy experiences (Moral Experience Questionnaire).

History of the Field

From its earliest beginning in colonial America, higher education in the United States has had multiple purposes. Aside from its traditional mission of the intellectual development of students, early colleges were also concerned with moral and ethical development. The early higher education focus on moral development was cemented in the denominational religious focus held by early colonial colleges. Early settlers erected the colleges because the new land would need "competent rulers, the church would require a learned clergy, and society would need cultured men" (Rudolph, 1990, p. 6.).

It was not until the twentieth century that the domain of moral development, and specifically moral judgment, was developed as a construct. The early works of Piaget formed the framework for Lawrence Kohlberg's foundational theory of moral development. James Rest expanded Kohlberg's theory by spearheading increased empirical investigation of the domain through the use of his objectively-scored Defining Issues Test.

Piaget

Piaget's works in cognitive development represent the foundation from which later theories on moral development emerged. Piaget theorized that children develop through a sequence of four stages of cognitive development (Piaget, 1932 and 1965). The four stage model represented an "invariant sequence of stages" through which each subject progressed (Driscoll, 1994, p. 175). Driscoll goes on to discuss how Brainerd (1978) further summarized the criteria for stage development change concerning Piaget's theory. According to Brainerd's summary, each stage represented a qualitative change in a subject's cognition and that subjects progress through the stages in a culturally invariant sequence. Further, regression to a lower stage is not possible once a higher stage has been entered. Each stage represents the cognitive structures and abilities of the preceding stage representing an inclusive hierarchical model. The cognitive reasoning a subject uses represents their current stage of development. This level of reasoning becomes susceptible to a shift to a higher stage when the subject experiences disequilibrium between current cognition and experiences (Driscoll, 1994, p. 175).

Kohlberg

Building upon Piaget's model, Lawrence Kohlberg theorized a model of moral development. Moral judgment is a construct that characterizes the reasoning process by which subjects determine that one course of action is

morally right and another course of action is morally wrong (Rest, Thoma, Narvaez, and Bebeau, 1997a). This construct is based on Kohlberg's (1969) stages of moral development which developmentally explain what "reasoning" a subject uses in his/her moral outlook. Rest (1979) stated that "moral judgment was the concern for how the benefits and burdens of social cooperation are to be distributed."

According the Quarry (1997), the study of moral development did not reach full potential until the works of Lawrence Kohlberg in the 1960s. At that time, Kohlberg established his theory of moral development based on extensive, longitudinal empirical research and the initial works of Piaget (1932).

Kohlberg's (1984) theory of moral development is firmly entrenched in psychological and cognitive development theory. He argued that individuals progress through a series of independent and hierarchical moral stages insisting that individuals could not skip stages in the development process and that they could not regress. Additionally, he argued that individuals could not advance to higher stages of moral reasoning until their reasoning in the current stage was challenged. Each stage represents a distinct foundational ideology as a support structure for moral decision-making. The consideration and weight that a subject gives to different issues in his/her decision indicates what foundational stage of moral development he/she occupies.

Kohlberg's theory includes three levels consisting of a total of six developmental stages (Table 1). Each stage represents a qualitatively distinct

orientation toward moral reasoning. The first level denoted preconventional reasoning where societal expectations remain external to the individual. The perspective is of an individual actor who follows rules in order to avoid trouble, satisfies needs, and maximizes his/her individual interests (Kuhmerker, 1991, p. 27). At the conventional level, the individual recognizes rules, obligations, and expectations as being part of the self. The individual voluntarily subordinates to the societal rules and obligations (Kuhmerker, 1991). Upon entering the postconventional or principled level of moral reasoning, an individual has extracted the general principles of freedom, equality, and human rights from the laws and norms (Kuhmerker, 1991). Instead of following the rules or norms of a specific society or group, the individual recognizes the more general principles governing all of humanity.

As with Piaget before him, Kohlberg held that each stage represented a qualitative change in a subject's moral reasoning, subjects progress through the stages of moral development in a culturally invariant sequence, regression to a lower stage of moral reasoning was not possible once a higher stage had been entered, each stage represents the cognitive structures and abilities of the preceding stage representing a hierarchical model of moral development, the moral reasoning a subject uses represents his/her current stage of development, and that shifts in moral reasoning stages occurred when the subject experienced disequilibrium between his/her current stage of moral reasoning and moral experiences.

Table 1: Kohlberg's Theory of Moral Development

| LEVEL | STAGE | DESCRIPTION |
|-----------------------------------|-------|--|
| 1-Preconventional | | This level relates to the concrete individual perspective where the morally immature child comprehends good and bad as physical consequences, rewards and punishments. |
| | 1 | Obedience and Punishment Orientation: Doing what you are told. In this stage, morality means to avoid breaking rules or harming others. Stage 1 individuals concern themselves with a self-centered understanding of fairness and how issues effect them. |
| | 2 | Instrumental Purpose and Exchange: Following self-serving rules. Correct moral actions satisfy individuals personal needs. "let's make a deal." |
| 2-Conventional | | As members of society, a person conforms and maintains their loyalty to the family and society, regardless of the consequences. Doing what is best for them is paramount at this level. |
| | 3 | Mutual Interpersonal Expectations and Good Relations: Moral judgment is based upon the expectation of persons who know and respect authority, individuals, or upon what is expected based upon a role. Need to approve and think positively about other persons. Good behavior means doing whatever pleases or helps others. |
| | 4 | Social System and Conscience Maintenance: Fulfilling personal duties, particularly to society. Laws are upheld unless they conflict with other social duties. Expectations for doing your duty, respecting authority, maintaining social order, and following rules. What is best for the group is most important. |
| 3-Post Conventional or Principled | | Defining, selecting, and implementing self-chosen principles and values that have importance apart from the group. Action is individually moral autonomous, embracing ethics and values that extend to all. |
| | 5 | Rights and Social Contracts: Different social systems are chosen that preserve the rights of the individual and the group. Respect for justice, equality, and human dignity. |
| | 6 | Universal Ethical Principles: Morality is guided by self-conscious, universal ethical principles. Persons are treated with value. Principles are maintained by a self-chosen commitment to support them, adopted purposely and applied consistently and uniformly. What is best for humankind. |

(Quarry, 1997)

Rest

A slightly different interpretation of Kohlberg's theory was professed by James Rest (1974, 1976, 1979, and 1986). While Rest supported Kohlberg's model, he argued that an individual's moral reasoning represented a collection of moral considerations from a cross-section of the moral stages. An individual in a particular stage used moral justifications from the present stage and a degree of considerations from lower stages--Kohlberg argued that a person's reasoning represented a single moral stage of development. For Rest, moral judgment was a distribution of stage scores which indicated the amount of consideration a person gave to a particular stage for a particular moral dilemma (Shaver, 1984).

Rest (1979, 1986) built upon Kohlberg's earlier model to profess a Four-Component Model of moral judgment that went beyond the cognitive construct of moral reasoning to account for other cognitive-affective interactions in moral action. Rest's model included the importance of interaction between moral feelings, reasoning, and behavior.

The first component concerned moral sensitivity where the subject interpreted moral situations by recognizing possible actions and how different actions affect other individuals involved (Rest, 1986). A significant variable in this component is empathy, which approaches the concerns that Gilligan (1977 and 1982) voiced concerning the woman's way of moral knowing.

The second component concerned moral judgment (Rest, 1986). This component represented the body of research advanced by Kohlberg concerning

moral reasoning development. For an individual to act morally, he/she had to be able to reason through moral issues. Rest (1974) designed the Defining Issues Test (DIT) as an objective measure of moral reasoning and an improvement over the more cumbersome Moral Judgment Interview (MJl) designed by Kohlberg. Further discussion of the DIT will follow in a later section. Investigation of this component of Rest's model is the main focus of this empirical study.

Rest's (1986) third component dealt with moral choice. Here, Rest focused on moral motivation in weighing different moral alternatives. He believes that individuals must choose among competing "good" moral values to determine their particular courses of action.

The fourth component of Rest's model represented moral action (Rest, 1986). Here an individual actually carried out his/her moral decision. This component differs from moral reasoning because individuals may know what is the morally right thing to do in a situation, but may not act morally. An example may include a student who reasons that it is morally wrong to cheat on a test and gain an unfair advantage over his/her classmates, but he/she decide to cheat anyway because the desire for a passing grade was a higher action impulse.

It should be apparent to the reader that a comparison of Rest's four component model with the three part character component program at the USAF Academy (outlined in Chapter 1) yields many similarities (Rest, 1986; Lickona, 1991; and USAFA Center for Character Development, 1994). The Academy's Character Development program focused on moral feeling, moral knowing, and

moral behavior. The moral feeling component at USAFA relates closely to Rest's first component on moral sensitivity. USAFA's focus on moral behavior compares favorably with Rest's fourth component on moral action. The combination of Rest's second component on moral judgment and his third component on moral choice mirror USAFA's final component of the character development program, moral knowing. This study focused on USAFA's moral knowing component paralleling Rest's moral judgment and moral choice components.

Measures of Moral Reasoning

Using Kohlberg's Moral Development Theory, researchers have sought to create instruments that measure a construct that represents this development in moral judgment. Their efforts focused on designing instruments that could capture and differentiate moral judgments based on the Kohlberg model. Some of the most popular instruments used for this construct are Kohlberg's Moral Judgment Interview (MJI) and Rest's Defining Issues Test (DIT).

In order to measure this construct, it is necessary to observe the decision-making, reasoning process that subjects invoke to decide moral issues. Behaviors associated with this construct involve defining the moral issues, how conflicts among parties are settled, and the rationale for deciding on a course of action (Rest, 1997a). All of these behaviors can be categorized and compared with the Kohlberg model or the Rest variation to determine what level of moral

reasoning the subject is operating.

An approach to quantifying this behavior is to confront subjects with moral dilemmas and obtain their reasoning and decisions concerning the situation. Each dilemma could be fashioned to incorporate decision-trees related to each stage of Kohlberg's theory of moral development. After a reliable number of these dilemmas have been answered, the researcher could obtain a reliable and valid indicator of what level of moral reasoning the subject used consistently through the instrument. Further discussion of the DIT and its reliability and validity will be discussed in Chapter 3. At this point, however, the discussion will turn toward the general usage of the DIT in moral reasoning research.

Research Agenda of the Field

Research using the Defining Issues Test in moral development has occurred in three stages. The first phase occurred from 1972-1979 and represented the period where the DIT was established as a valid and reliable objective measure of moral judgment development. Before this period, Kohlberg's Moral Judgment Interview was the most recognized instrument used for measuring moral development. As the MJJ was a time consuming and difficult instrument to score, Rest (1974) worked to develop a more easily administered, objective measurement of moral judgment. The period from 1972-1979 represents Rest's development of the DIT, establishment of its reliability and validity through empirical research, and reconsideration of how individuals

develop according to Kohlberg's developmental theory (Thoma, 1994).

The second phase of DIT research spanned 1979-1986 and experienced a ten-fold increase in the number of studies using the instrument (from 50 by 1979 to 500 by 1986). Here, the focus of research was on the relationship between moral judgment development as assessed by the DIT and other demographic and developmental variables. Most of the empirical research supporting the relationship of selected variables to moral judgment development occurred during this phase (Rest, 1986; Thoma, 1994).

The third phase of DIT research represents current research in the field, 1986-present (Thoma, 1994). It is this third phase that highlights the ongoing research agenda of the field and its expansion into various professions. This study is an example of how the military profession is seeking to incorporate DIT research into its Character Development Program.

This current phase of DIT research represents an expansion of moral judgment research by a new class of researchers. "New users of the DIT are invested in the various professions and are interested in the degree to which specific courses or established curricula have an effect on the moral judgment development of students in their various programs" (Thoma, 1994, p.5).

Different DIT scoring indices have also been undergoing review in the current phase. Researchers have continuously relied on the P index as an indication of the relative importance a subject places on principled moral considerations. After lengthy empirical research using meta-analysis techniques,

a new index (N2) has recently emerged as an indicator that might outperform the P index by using more subject input from the DIT (Rest, Thoma, Narvaez & Bebeau, 1997b). Since the N2 index is a recent entrant into DIT research, it remains unclear as to whether it signals a fourth phase of DIT research or a continuation of the third. Nonetheless, this study provided an opportunity to utilize the index with a relatively large sample size.

One scholar that has kept the pulse of moral development research is Lisa Kuhmerker, founder of the Moral Education Forum and chairperson of the Dissertation Awards Committee of the Association for Moral Education. She states "the most urgent need is for descriptions and evaluations of character education programs that are currently in schools" (Kuhmerker, 1995). Kuhmerker also called for further inquiry into moral education in the military training environment with specific interest in the values the military is trying to inculcate in recruits. She suggested that in-depth research could be conducted to reveal how recruits interpret the values training which they are exposed. According to Kuhmerker, "In a democracy where the military is under the direction of a civilian government structure, civilians have an obligation to inform themselves about the values taught in military institutions" (Kuhmerker, 1995, p. 6).

Rice (1986) represented the third phase of DIT research when he conducted a study of moral reasoning at the Air Force Academy. He attempted to address some of Kuhmerker's concerns by conducting both a quasi-

experimental and descriptive study of cadet moral development. While the quasi-experimental investigation of moral reasoning development associated with completion of a core ethics course was insightful, the descriptive cross-sectional portion of his study lacked sufficient sampling to obtain useful and reliable data. Additionally, substantial institutional change occurred concerning the deliberate character development program. No empirical studies have been conducted to investigate cadet moral development under current institutional conditions.

Longitudinal Studies

Longitudinal methods have proven fruitful in moral development research (McGeorge, 1976; Mentkowski and Strait, 1983; Rest, 1975 & 1986; Shaver, 1984; and Towers, 1984). Rest (1979) indicates that longitudinal studies provide the best evidence of changes in individual moral development over time. Wood (1993) held that longitudinal studies serve to further illuminate the relationship between moral development and institutional programs such as the Academy's academic and character development programs.

The current longitudinal research utilizes the incoming DIT score for each cadet in the Class of 1999. Each cadet in the Class of 1999 was administered the DIT in 1995 during basic cadet training summer. The DIT was administered in a large group academic setting where cadets were placed in classrooms for data collection. Raw DIT selections for each subject were maintained in USAFA

Institutional Research databases and were made available to the researcher for analysis. A follow-up administration of the DIT to a random sample of Class of 1999 subjects was conducted during the Spring 1999 semester. This follow-up administration facilitated longitudinal analysis of changes in cadet moral judgment. Entry to follow-up data on the class of 1999 represents a four-year longitudinal study.

According to Rest, "Virtually all research in the cognitive developmental tradition starts out by looking for age trends--to see if older, presumably more advanced subjects show 'higher' state responses...Without this kind of empirical support, a developmental theory does not get off the ground" (Rest, 1986, p. 28). The Air Force Academy focus on developing cadet character over four years indicates its commitment to impacting the many constructs that combine to establish character domain. This section focuses on the utilization of longitudinal methods in DIT research.

Following individuals over time and retesting them with the DIT at periodic intervals provides the most direct evidence of whether there is change in moral judgment (Rest, 1979). One early study that utilized longitudinal methods in DIT research was unable to identify significant changes in moral judgment over a two year period. McGeorge (1976) found no significant increase in principled moral reasoning of students involved in a two-year teacher training course. Rest (1979) concluded that two years was a short span in moral judgment research, especially at the collegiate level, where students are approaching adulthood

where the development of principled moral judgment begins to plateau.

Longitudinal studies utilizing the DIT over periods of four years of college education have been more successful in identifying significant change in moral reasoning. Shaver (1984) found that almost half of the subjects involved in a four-year collegiate study increased in principled moral reasoning where less than 10 percent decreased in their usage of principled moral reasoning. Mentkowski and Strait (1983), Biggs and Barnett (1981), and Spickelmier (1983) also conducted four year longitudinal studies of college students in different college environments. Each study identified statistically significant gains in principled moral reasoning from entry into the institution to follow-up four years later.

Bridges and Priest (1983) conducted a longitudinal study of United States Military Academy (USMA) cadets in the Class of 1981. The results, like the studies conducted in civilian institutions, indicated that the cadets had statistically significant gains in moral reasoning over the four years--from an entry mean P-score of 36 to a graduation P-score of 43.

While these studies indicate the utility of longitudinal DIT research, Rest (1979) warns of possible contaminants that might interfere with the generalizability of longitudinal results. Rest indicates that testing effects, sampling bias, and generational effects must all be considered when analyzing longitudinal studies.

Rest (1979) identified testing effects, which might influence DIT scores. Subjects that undergo repeated testing might show higher scores due to familiarity with the test through practice or may show lower scores based on boredom or habitually answering the instrument in the same manner. The present study hopes to overcome problems associated with testing effects because the time between DIT testings for the USAFA Class of 1999 was 3.5 years. This research contends that the long period of time between Class of 1999 DIT testings alleviates familiarity or habitual answering on the instrument. While boredom due to test familiarity should not be a problem, boredom with surveys and instruments in general may be an issue with the cadet subjects.

Rest (1979) also indicated that sampling bias can affect the interpretation of longitudinal results. According to Rest, gains in the group mean of principled moral reasoning could result from lower scoring subjects dropping out of the cohort over time (Rest, 1979, p. 137). This research hoped to overcome sampling bias through the employment of a large sample size. While a nearly complete census of the Class of 1999 was conducted using the DIT at entry into USAFA in 1995 (1,299 cadets completed DIT out of a population of 1,340 cadets), the Spring 1999 follow-up administration targeted 41.2 percent of the remaining Class of 1999 cadets (398 cadets enrolled in the core MAS 440 and core substitute MAS 472 courses out of a Class of 1999 remaining population of 966 cadets). Additionally, further analysis of incoming DIT scores was conducted based on Class of 1999 cadets that completed the USAFA program

versus original Class of 1999 cadets that did not complete the USAFA program (Class of 1999 at entry N=1340, Class of 1999 remaining at follow-up N=966, indicating an attrition rate of 27.9 percent). This analysis determines if the incoming DIT scores of cadets that did not complete the USAFA program were significantly different from the incoming DIT scores of cadets that completed the USAFA program.

The final area of longitudinal concern that Rest identified was generational effects (Rest, 1979). Here, Rest suggested that the generalizability of results from a longitudinal study are affected by the unique experiences and cultural changes that occurred during the study of the particular cohort. While Rest does not suggest that these cultural and experiential issues affect the internal validity of the studies, he does suggest that the generalizability of the results to other populations may be affected.

Rest's concerns about generational effects are a primary reason why the results of Bridges and Priest's 1983 military academy study are not directly generalizable to current USAFA cadets. While the Air Force Academy is similar to the other military academies (and earlier historical equivalents) in its mission to produce military officers, its focus on character development issues has heightened in recent years. This heightened focus has resulted in a more direct character development intervention program. Additionally, recent high profile public and academy-related moral judgment issues such as the U.S. President's admitted lying to conceal marital infidelity and the dismissal of First Lieutenant

Flynn (a 1994 USAFA graduate) from the Air Force for lying, disobeying orders, and fraternization have resulted in heightened awareness and discussion of moral judgment for the Class of 1999.

The use of longitudinal methods in this study were intended to provide evidence of change, or lack of change, in moral judgment during the four year Academy program. Incoming Class of 1999 DIT scores were closely compared with institutional records identifying students who are no longer at the institution as well as the reason for their departure. The large sample size of this study, the large period of time (3.5 years) between initial and follow-up DIT administrations, and the similarity between data collection environments (for entry and follow-up samples) all combined to provide valid and reliable data for analysis.

Studies Using Experiential Questionnaires

The college environment is a collection of formal and informal academic, experiential, social, and moral interventions. In each case, the subject comes to individualized understanding of the particular meaning of these experiences. A well-intentioned moral intervention could have negative effects on a student's moral judgment development while an informal discussion with an English professor or classmate might have significant moral reasoning development implications.

In order to understand the importance that subjects place on the relationship between their collegiate experiences and their moral judgment

development, many researchers have utilized experiential interviews, checklists, or questionnaires (Deemer, 1987; Rest, 1975; Rice, 1986; Trull, 1990; Spickelmier, 1983; Volker, 1979; and Whiteley, 1980). Rest (1975, 1979 and 1986) utilized a single question survey where subjects were asked to reflect upon their experiences of the two previous years to speculate about what influenced their moral reasoning. Rest (1979, p. 222) contended that eight kinds of experiences seemed to facilitate development in moral judgment. These included: (1) discussing controversial problems with others and in the process gaining practice and insight in making moral judgments; (2) being exposed to better moral thinking than one's own; (3) recognition of conflicts in one's own valued, or in the inadequacy of one's own assumptions and decision-making strategies; (4) the assumption of new responsibilities for taking care of others; (5) the push to make important life decisions which created the need for a conceptual framework for sorting the issues involved and for making consistent decisions; (6) experiencing personal tragedy or being touched by another's problems which shocked one into reflection; (7) broadening experiences; and (8) meeting new people who have drastically different perspectives.

Deemer (1987) and Spickelmier (1983) utilized interviews of college subjects to determine what experiences contributed to perceived development in moral reasoning. Spickelmier discovered that students who became 'involved' in college perceived higher moral reasoning growth and had higher DIT scores. Deemer's 1987 study supported Spickelmier as subjects with higher DIT scores

identified collegiate involvement and academics as key factors in moral reasoning development. Whiteley (1980) discovered that subjects identified their immediate peer group, exposure to different perspectives, relationships with the opposite sex, personal spiritual experiences, and exposure to more mature thinkers as contributors to moral judgment development. Few in Whiteley's study identified relationships with faculty and staff as being important. Volker (1979) discovered that subjects identified significant decisions with a person of the opposite sex as having an influence. Volker (1979) and Rest (1979) indicated that subjects moving away from home had an impact on moral judgment development. Resnikoff and Jennings (1980) reported that subjects identified disequilibrium, diversity of views, and decision making as college environment contributions to their moral judgment development.

Rice (1986) developed a Moral Development Questionnaire to obtain USAF Academy cadet inputs on factors contributing to their moral development in association with a core philosophy course. Rice's questionnaire was designed as a closed-ended checklist where cadets selected from predetermined categories of experiences. Additionally, Rice's questionnaire was rigid in that cadets could only select one categorical type of experiences as have the most impact. Rice limited cadet selections to the honor code system, parental values and attitudes, religious training and beliefs, and analyzing contemporary moral issues facing our society. He also provided an "other" selection.

It is this researcher's opinion that Rice's questionnaire and other moral experience checklists are too rigid. There is an unlimited number of experiences that subjects might want to identify as contributing to their moral judgment development. Limiting the subjects to a small number of categories or categories that the researcher deems important undermines the symbolic interaction that occurs between the subject and his/her environment.

In an effort to obtain a more accurate account of the experiences that Class of 1999 cadets deem significant to their moral reasoning development, this researcher designed an open-ended Moral Experience Questionnaire (MEQ). The MEQ consisted of a limited number of focused, yet open-ended, questions that attempt to capture the symbolic interaction that occurred between respondents and their Academy environment. The theoretical assumptions associated with Symbolic Interactionism will be discussed later in this chapter. The MEQ will be discussed further in Chapter 3 along with the other instruments utilized in this study.

Relational Studies

A large body of demographic, experiential and affective variables have been researched in relationship to moral reasoning over the past 30 years. The following discussion represents the current state of empirical evidence concerning selected demographic variables and experiences. Following each discussion of empirical evidence relating to each variable, a justification for their

selection for further research at the United States Air Force Academy is included (this represents questions for further research study based on inconclusive evidence relating to the variable or why the Air Force Academy provides a unique environment for continued study of a variable).

Gender

Gender became a hotly debated variable in moral judgment when Carol Gilligan published her controversial article concerning a woman's concept of self and morality (Gilligan, 1977). Gilligan suggested that moral development differs for females than for males because females are socialized toward the concept of caring, social relationships, and feelings. Males, on the other hand, were justice based in their concept of morality. Rest (1986) provides a concise synopsis of Gilligan's claims.

She starts with the premise that male social development highlights a growing sense of individuality, while female development stresses connectedness between individuals. She then contends that these markedly different social pathways results in the development of two moral orientations: a justice orientation for males and an ethic of care for females. When women are assessed under Kohlberg's justice-defined measure of moral judgment, women are misscored...resulting in the downgrading of female moral judgment so women appear to be morally inferior to men. (Rest, 1986, p. 111)

While scholars recognized the apparent logic of Gilligan's claims, empirical research has failed to support it. Thoma (1984) conducted a

secondary analysis of over 6,000 subjects to investigate the relationship between gender and moral reasoning. His findings indicated that gender difference did not support Gilligan's theory--females actually scored higher on the DIT than males. Additionally, he determined that gender accounted for only 0.9 percent of the variance in DIT scores. Moon (1986) conducted a gender analysis at the individual item level on the DIT. His study concluded that gender differences at the item, P-score, and D-score levels were trivial.

Dissertations by Guldhammer (1983), Shaver (1984), Trull (1990), Wood (1993), and Quarry (1997) failed to support Gilligan's assertion that current measures of moral reasoning shortchanged females. All of these studies either failed to find any gender differences in moral reasoning or found differences that favored females.

Rice (1986) attempted to investigate the gender relationship to moral reasoning at the Air Force Academy. He included the variable in his study in response to a 1985 report that indicated that female members of the USAFA class of 1980 had outperformed their male counterparts academically and militarily (Ginovsky, 1985). Unfortunately, Rice's study failed to include large enough samples to draw conclusions. Based on his small sample of cadets, he found no gender differences in moral judgment (Rice, 1986). Based on Rice's incomplete analysis, gender was included as a variable in this study to determine if gender differences in moral reasoning do exist at USAFA.

Region

Some tentative discussion in the literature has surrounded differences in moral judgment based on geographic location within the United States. Quarry (1997) reported that geographic region was inconsistently related to moral reasoning and determined that geographic location of respondent's family residence had no relationship with DIT score in her limited study of a Christian Liberal Arts institution in Southern California. Rest (1979) reported that his analysis of cross-sectional studies containing 2,500 college subjects from around the country indicated that samples from the Southern United States had the lowest DIT scores (he suggested that this might be due to the conservative traditions associated with that part of the country). From the combined study of college samples with a mean DIT score of 41.6, college samples in Georgia scored 24.5 and Virginia college samples scored 34.0 (Rest, 1979, p. 115). In her doctoral dissertation, Anette Guldhammer indicated her sample of college students in the United States scored higher than foreign students (Guldhammer, 1982).

While little can be concluded from the studies mentioned above, Rest (1979) suggested that more empirical studies on this issue would be of interest. Although it represents a highly selective and unique population of college students, the Air Force Academy draws its student body from throughout the United States and its territories. Each state is allotted so many slots at the Academy based on congressional limits (each state senator and congressman is

allotted a fixed number of student positions at the service academies). This environment provides an opportunity to research a uniquely representative population of students that are drawn from all regions of the United States.

Age and Education

A person's age and level of formal education represent the two main correlates with development in moral reasoning. From the beginning, moral reasoning research has been founded in the belief that it was a developmental theory in which an individual progressed in moral reasoning as he/she proceeded through various age/education stages in his/her life (Kohlberg, 1958; Piaget, 1932/1965). Rest (1979) argued that evidence of change over time from less advanced forms of thinking to more advanced forms of thinking was functionally required for a cognitive-developmental construct to be considered legitimate. With Piaget, Kohlberg, and Rest clearly asserting that an individual's cognitive and moral reasoning developed over time (according to age and level of formal education), empirical support was necessary to support their claims.

Early researchers trying to support the age-education-moral development claim turned to Kohlberg's MJT as the instrument to measure moral development over time (Colby, Kohlberg, Gibbs, and Lieberman, 1983; Snarey, Reimer, & Kohlberg, 1985). By the 1970s, the majority of research focusing on moral development utilized the DIT (Rest, 1979/1986). In both cases, researchers have been able to capture the age-moral development relationship using both

cross-sectional and longitudinal studies.

Rest (1979) conducted a secondary analysis of over 3,000 subjects reported in cross-sectional studies. His analysis revealed that age/education accounted for up to 49 percent of the variance in DIT scores. A meta-analysis of over 6,000 cross-sectional subjects showed that age/education accounted for 52 percent of the variance in DIT scores (Thoma, 1984).

Longitudinally, Rest (1986) reports a ten year study of over 100 subjects where general age-education-moral reasoning trends indicated upward movement on a correlated t-test ($95\ df = -9.7, p < .0001$). Other longitudinal studies consistently show upward trends in DIT scores over time as well (Biggs and Barnett, 1981; Bridges and Priest, 1983; McGeorge, 1976; Mentkowski & Strait, 1983; Spickelmier, 1983; and Whiteley, 1982).

Further empirical research attempted to partial-out the unique relationship between educational level and moral reasoning (since age-education were confounded in most of the other studies). Dortzbach (1975) used an adult sample of subjects 25 to 74 years old to compare educational trends in relation to moral reasoning. Grouping by educational level produced the highest average DIT P-scores, versus grouping by age, suggesting that education was more highly correlated with moral reasoning than age. Other studies provided further empirical evidence to support Dortzbach's findings. Coder (1975) found educational level significantly correlated with DIT P-score $r(81) = .25, p < .05$ using a sample of 87 adults ages 24-50. Crowder (1976) discovered similar

results using 70 subjects age 18-59. Crowder found an education correlation of $r = .25, p < .05$. Few studies have contradicted these education trends and those that do were confined to educational environments that embraced a conservative milieu such as private, religiously-affiliated institutions (Quarry, 1997; Shaver, 1987).

Based on the consistent and significant empirical evidence available, Rest (1979, p. 112) concluded that "cognitive restructuring of one's moral thinking seems to be more related to formal education than to passage of years." In 1985, Rest and Thoma came out even stronger asserting that formal education was the most consistent and powerful correlate with moral judgment (Rest & Thoma, 1985).

While the research confirming the relationship between formal education and moral judgment is convincing, less consistent evidence exists as to the unique effects of the different levels of education representing the four year higher education institution. A secondary analysis of Rest's 1979 data by Pascarella and Terenzini (1991) revealed that year of student enrollment was correlated positively with DIT P-scores and represented 22 percent of the variance, $p < .001$.

Several studies attempted to provide more specific evidence of gains in moral reasoning by year of college (Loxley & Whiteley, 1986; Mentkowski and Strait, 1983). Loxley and Whiteley discovered that that P-score gained 11.14 points from freshmen to senior with 37 percent of the gain occurring during the

freshmen year. Mentkowski and Strait's study revealed that freshmen to senior P-score gains were 9.7 points with freshmen to sophomore gains accounting for 76 percent of the total gain. Studies confined to religiously affiliated colleges indicate less dramatic changes in moral reasoning by year in college (Quarry, 1997; Shaver, 1984 and 1987).

In their summary of research studies concerning change in moral reasoning by year in college, Pascarella and Terenzini (1991) concluded that students typically make dramatic gains in moral reasoning during college. While it is difficult to consolidate typical gains to year of college education, they suggest a tentative conclusion that the greatest gains in principled moral reasoning at the expense of conventional moral reasoning occur during the first year in college due to the dramatic shift in environment--they readily admit that this tentative assertion is based on the small number of studies that exist.

With some studies indicating significant shifts in moral reasoning by year of college education and others suggesting inconsistent development, this researcher sought to investigate change in moral reasoning for the Class of 1999 at the Academy. Like the private religiously-affiliated institutions, the Academy is a unique environment with a specific mission in college student development. Each class year represents a distinct period in the cadet's development toward becoming an Air Force officer. As such, investigation of moral reasoning from entry into USAFA until the final semester of attendance, four years later, should provide evidence of overall group change concerning the moral judgment of

officer candidates.

Educational Environments

While the age-education variables have indicated a high correlation with moral judgment in samples of the general population, less evidence exists relating to how different educational environments effect moral judgment development. Rest (1986) even questioned what the variable "years of education" represented. He asserted that it stood for a plethora of experiences and psychological processes that were unique to those who continued formal education as opposed to those who did not. The conclusion then, was assuming that formal education contributed to moral judgment development, what variables within the educational environment and what kind of educational environments affected moral reasoning development?

Studies in different types of educational environments have been undertaken to see what experiences and environmental factors correlate with moral development (Guldhammer, 1982; Quarry, 1997; Rice, 1986; Trull, 1990; and Wood, 1993). A recently completed dissertation at a Christian Liberal Arts institution found no significant development of student moral reasoning over the four years of education and no significant relationships between DIT score and age, gender, GPA, SAT, or geographic location of respondent's family residence (Quarry, 1997).

A secondary analysis of data provided by Rest enabled Pascarella and Terenzini to investigate moral reasoning at different types of higher education institutions in order to make tentative comparisons on how type of institution relates to moral reasoning development (Pascarella & Terenzini, 1991). Controlling for year in college, institutional type accounted for a statistically significant portion of the variance in P-scores (R^2 increase = 31.26 percent, $p < .001$). Further investigation revealed that public comprehensive universities, private universities, and private liberal arts colleges had the least "type" effect on moral reasoning. Public research universities were somewhat higher and church-affiliated liberal arts colleges had the most impact (Pascarella and Terenzini, 1991). Admittedly, this evidence contradicts the findings of individual studies concerning moral development in selected college and university environments and likely represents other variables in the student selection process.

Nonetheless, aside from Bridges and Priest (1983) and Rice (1986), no moral development research has been conducted in the unique "military" academy environment. While these earlier studies provide some interesting research, improper and incomplete sampling, as well as significant alterations to the Air Force Academy Character Development program in the early 1990s, demanded that the Academy environment be revisited for moral judgment research.

Grade Point Average (GPA)

As was discussed in an earlier section, Kohlberg's Moral Development Theory is a cognitive development theory that builds upon the early works in cognition by Piaget. There are many variables that serve as cognitive factors, one of them being Grade Point Average (GPA). GPA can be considered a cognitive variable because of its association with intelligence, cognitive complexity and comprehension (Wood, 1993).

Research into the relationship between GPA and moral judgment indicated that GPA was negatively correlated with conventional moral reasoning, but positively associated with principled moral reasoning. In his sample of college students at a state university in the Midwest, Clouse (1991) discovered that GPA accounted for 6.6 percent of the variance in P-scores. Wood (1993) found consistent, yet less dramatic results in his study of college students. GPA accounted for 1.8 percent of the variance in predicting P-score with Adj R^2 of .15.

While these earlier studies showed some correlation between GPA and moral judgment, a recent study could not replicate the findings. Quarry (1997) found no relationship between principled moral reasoning and GPA at a Christian Liberal Arts institution.

The Air Force Academy, like other colleges and universities, uses GPA as an indicator of course success in academics. It represents one of many measurement indicators that are considered when determining the commissionability of a cadet. It is also a key indicator used in the selection of

graduation assignments--cadets with the highest GPA and MPA composite are typically the ones that have first choice from the limited job assignment pool. Investigating the relationship between GPA and moral judgment was necessary at the Academy to shed further light on the interaction.

Parental Influence

Like other experiential opportunities, parent-student interaction is thought to have an important role in moral judgment development (Rest, 1974; Gilligan, 1982). Parents, by virtue of their child-rearing duties, had an initial influence on the moral development of their children through warmth, limit setting, and encouragement of independence (Newman and Newman, 1978). Parenting, according to Piaget (1965), induced development of obedience of obligations out of mutual respect.

While extensive empirical research between the parental variable and moral judgment does not exist, Wood (1993, p. 32) suggested that one area that may predict moral development is parental educational level since formal educational level had a direct impact on DIT score. In an investigation of ego identity status, Restrum (1993) found a relationship between mother's educational level and a student's ego identity status. Haan, Smith, & Block (1968) found that home background was related to moral judgment where students reported their parents were politically liberal and that both parents were well educated. These students also reported some degree of parent to parent or

parent to child conflict that might represent opportunities for moral disequilibrium.

This variant of the parental background variable may be useful in predicting moral judgment at the Air Force Academy. Since the Academy's history dates back to 1955, the institution is increasingly enrolling cadets whose parent(s) either graduated from a military academy or served on active duty through an alternative commissioning source. Investigation of the relationship between military academy graduation status of cadet parents and/or siblings and cadet moral reasoning was intended to evaluate whether the interaction could be useful in predicting cadet moral development.

Leadership Roles

The leadership variable is categorized by what Kohlberg called role-taking opportunities (Kohlberg, 1976). Role-taking was important in moral development because it provided subjects with the opportunity to view issues from varying perspectives and be placed in situations where they were responsible for the welfare of others. Being in a leadership position forced an individual to struggle with difficult decisions, which contributed to the moral disequilibrium that was necessary for transition to a higher stage of moral reasoning. Other researchers have also asserted that leadership roles provide opportunities for moral disequilibrium in students (Rest, 1974 and Keasey, 1971)

While Kohlberg's assertions make intuitive sense, no comprehensive and consistent empirical evidence exists that captures this phenomenon. Volker

(1979) found significant negative correlation between responsibility for others, facilitative relationships, and moral judgment. According to Volker, these results may have resulted from experiences that were emotionally too affective in that they disrupted rational cognition of moral reasoning arguments (Volker, 1979, p. 26). Kraack (1985) compared degree of campus involvement with moral judgment. He found no statistically significant relationship between moral judgment and level of leadership.

Rest (1979) calls for continued investigation into the effect of leadership opportunities on moral judgment. Since leadership and moral development are two primary missions of the Academy, it represented a unique environment for studying institutionalized role-taking by students and its relationship to moral judgment development.

Military Performance Average (MPA)

Military Performance Average (MPA) represents an Air Force Academy specific rating system. It is a measure of a cadets' performance concerning their obligations, responsibilities, and conduct. It is established along the same 4.0 scale that is used in Grade Point Average (GPA). Cadets are rated by their cadet chain of command as well as the active duty officer in charge of their respective squadrons. Cadets must maintain a semester MPA above a 2.0 and a minimum cumulative MPA of 2.0 is required for graduation. Cadets that fail to meet a minimum semester or cumulative MPA of 2.0 could face probationary

status or possible dismissal.

MPA is used as a broad indicator of military performance. Upper-class cadets are rated on how well they perform as leaders of the Cadet Wing while underclass cadets are rated on their subordinate job performance and followership. The MPA is used as a selection indicator for cadet leadership positions as cadets progress in class year at the Academy and is also a consideration in the selection of graduation assignments.

While no direct empirical evidence exists relating MPA to moral judgment, it is a relevant variable of concern to Academy decision-makers. Additionally, MPA represents a combination of previously discussed variables such as leadership roles and a cadet's ability to live up to their responsibilities and the authority structure of the military.

Lawrence (1978) conducted a study that indicated that some groups in American society require strict adherence to a codified set of beliefs as a condition of membership within an autocratic community. He found that members of the group had high stage four law and order scores, but low P-scores. This is consistent with bureaucratic socialization theory where a rule-oriented socialization process is pursued (Slaten, Lampe, Sparkman, and Hartmeister, 1994). Hoy and Miskel (1982) found that bureaucratic systems consistently mold the behavior of their members to ensure individual beliefs and values correspond with those of the organization. Wiggins (1970) claimed this bureaucratic molding was done to maintain stability.

The intent of the present study was to determine if higher levels of MPA represented a dedication to a law and order justification, translating into an inverse relationship between MPA and moral reasoning--those with high MPAs being conventional moral reasoners and those with lower MPAs being principled moral reasoners.

Waiver of Entrance Requirements

Waiver status is a variable that represents whether a cadet received an admissions waiver as part of his/her matriculation to USAFA. Waivers are provided to candidates who do not meet specified admissions criteria in certain areas under consideration, but may excel in other areas considered for admissions. Examples may include a cadet that has tremendous leadership and academic potential, but may have scored below minimum requirements on physical fitness standards or a cadet that is a recruited athlete high in physical fitness and leadership, but below academic standards.

This variable commingles academic, athletic, and social variables into a uniquely considered category at the Air Force Academy. It is included as a variable in this research to determine whether waiver status (independent of type) relates to a cadet's moral judgment development.

Prior Service History

Another variable that is unique to the Air Force Academy, but has not been discussed in the literature, is the relationship of a cadet's prior military service to moral judgment development. This extra experience represents a interim period between high school graduation and matriculation at the Academy. Whereas most cadets enter the Academy directly after their high school graduation, many become cadets after serving on active military duty in enlisted status. During this enlisted period, the cadet experienced social interaction in the military environment, most likely lived away from home, received some form of character education through basic training, were made responsible to a larger organization, and were held accountable for their actions. Since this variable represents an additional and unique period of age and educational development, it was investigated using entry DIT and longitudinal follow-up DIT scores.

Preparatory School

Some cadets that enter the Air Force Academy as freshmen have already completed a year of "education" in a military environment. The Academy maintains a preparatory school, which enrolls cadet candidates that are otherwise qualified for admission, but require additional academic instruction to improve their SAT/ACT scores. The population of cadet candidates at the preparatory school as a whole represent those with lower SAT/ACT scores, recruited athletes, and prior enlisted military personnel with outstanding military

records but weak SAT/ACT scores.

As mentioned in earlier sections, age/years of education relate highly with moral judgment DIT scores. Unfortunately, no research exists as to how this additional year of education relates to a cadet's moral reasoning development. As a result of this void in empirical research, the relationship between preparatory school attendance, USAFA entry DIT score, and longitudinal follow-up DIT score was investigated to determine whether students who attend the preparatory school prior to entry into USAFA differ in moral judgment from cadets that enter directly into the Academy from high school.

Subject Attrition

Rest (1979) warns longitudinal researchers that sampling bias can affect the interpretation of results. When conducting longitudinal studies, researchers need to understand that indications of gains in moral reasoning may be related to the attrition of lower scoring participants during the study. If subjects who scored lower on the initial DIT are more representative of individuals who did not complete the entire Academy program (and the follow-up DIT), then perceived increases in the group DIT means are likely attributed to fewer low scoring subjects in the study.

In order to account for subject attrition during this research, institutional databases were utilized to identify cadets in the USAFA Class of 1999 who were disenrolled after the initial DIT testing and prior to the follow-up DIT

administration. Academy databases identified each disenrolled cadet as well as the reason for the disenrollment. Reasons included, but are not limited to, cadet death, cadet self-initiated drop-out, conduct violations, academic dismissal, medical dismissal, church missions, and honor code violations. The research focus on moral judgment investigated whether the incoming DIT scores of cadets that completed the USAFA program differed from the incoming DIT scores of cadets who were disenrolled from the Academy.

Theoretical Framework

The body of research framing the construct of moral judgment provides compelling evidence suggesting that college attendance is an important factor in moral reasoning development. Both Lickona (1991) and Rest (1986) propose theoretical models that place individual moral reasoning at the heart of any program designed to foster character development in college students. Without an ability to reason through a moral dilemma, it would be difficult to expect an individual to select a proper and moral course of action.

This research was designed to investigate the moral knowing component of the Air Force Academy Character Development Program, which was taken directly from Lickona's 1991 model. The study utilized Rest's Defining Issues Test, which is an objective measure of moral judgment. The DIT categorizes moral judgment using Kohlberg's Model of Moral Development. The researcher readministered the DIT to a sample of Class of 1999 cadets to obtain follow-up

moral reasoning scores which were utilized to analyze evidence of changes in Class of 1999 moral reasoning over three and a half years of institutional exposure.

Calls for further research into this domain continue to emanate from the field. This research attempted to answer these calls. It provides further insight into the moral reasoning component, which Lickona and Rest contend is a functional necessity in character education. The research supports inquiries by moral education researchers such as Lisa Kuhmerker who called for further investigation of the types of values that military institutions were trying to instill in today's recruits.

Most importantly, this research evaluates the Lickona-based character development model, which the Air Force Academy professes. The research determined whether cadets change in moral judgment while at the Academy and how these longitudinal changes compare to other types of higher education environments and an earlier study at a military academy. Additionally, the research investigated the cadet perception of meaningful moral reasoning experiences in comparison to the professed experiences programmed by the institution.

Symbolic Interaction Between Cadets and Their Environment

The purpose of the qualitative portion of this study was to obtain cadet perspectives concerning moral judgment development. In order to accomplish

this, the primary method of data collection was utilization of an open-ended questionnaire (MEQ). Symbolic Interactionism provided guiding theoretical premises most recently identified by Herbert Blumer (1996). Blumer suggested that human beings act toward things on the basis of the meanings that the things have for them. The meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows. Finally, the meanings are handled, and modified through, an interpretive process used by the person in dealing with the things he/she encounters (Blumer, 1996, p.2). Using these premises, probing questions were developed for the MEQ to delve deeper into cadet interpretation of moral meaning from Academy experiences.

A review of Symbolic Interactionism literature contributed a number of concepts and theories useful for qualitatively analyzing how human beings act towards things on the basis of the meanings those objects have for them. In the present study, it was apparent that cadet meaning of life events was derived from the social interaction he/she had with others and that he/she handled meanings and modified them through an interpretive process. The following discussion is meant to introduce key Symbolic Interactionism concepts that were utilized by the researcher to analyze cadet interpretation of moral judgment meaning on the MEQ.

MacKinnon (1994) contributed the knowledge of affect control theory, role theory, identity theory, and role improvisation. According to MacKinnon, "Affect control theory proposes that people construct social events to confirm the

affective meaning of their situated identities and those of other actors; and when events occur that strain these sentiments, people initiate restorative actions and cognitive revisions to bring affectively disturbing events back into line with established sentiments" (MacKinnon, 1994, p. 4). MacKinnon also discusses two schools of role theory useful for interpreting socially created roles and experiences. The *sociological* perspective holds that society is a stable, structured and consensual system consisting of receptive organisms. As such, roles are habitualized scripts that constrain an individual's activity (MacKinnon, 1994, p. 84). The *interactionist* perspective argues that consensus is a precarious thing in a society (MacKinnon, 1994, p. 85). The individual retains flexibility through personal interpretations and shifting definitions of contextual variables. Roles for interactionists are much more flexible because individuals create their own interpretations of how they will act. MacKinnon's discussion of *identity theory* introduced the subjective nature of individual interpretation of positional responsibilities. In order for an individual to interpret an identity from a social relationship, this theory presupposes that the individual must actually participate in the social relationship--personal identity becomes situated to the context of the situational variables (MacKinnon, 1994, p. 86). An individual's decision to maintain a specific role is reliant on the prominence of the situation, amount of internal and external support to sustain a specific role, a person's investment in the social situation, and the intrinsic and extrinsic rewards related to the role identity (MacKinnon, 1994, p. 87). Lastly, MacKinnon provides useful

insight into how individuals improvise roles based on contextual interpretations. Role improvisation occurs when events challenge the roles of individuals-- participants may choose to stabilize variables to accommodate expected roles or they may improvise roles to meet new situational expectations (MacKinnon, 1994, p. 115).

Herbert Blumer provides a classification system for determining the different "objects" that make up the socially created reality that human beings live in (Blumer, 1996, p. 10). This classification system (physical, social, and abstract) is helpful in identifying the types of objects that cadets identify as meaningful. Additionally, the classification system is useful in evaluating the consistency of meaning that cadets attribute to objects across a spectrum of situational variables. Using Bloomer's concept, it is believed that if changes in cadet moral judgment are observed, cadet MEQ responses will suggest that these changes are due to modifications of the objects surrounding him/her.

Berger and Luckmann provided insight into the habitualization of activity through social institutionalization (Berger and Luckmann, 1966, p.51). Their concept held that social interaction resulted in a norming of expectations and activities. The perspective that institutions control human conduct plays an important part in cadet interpretation of meaning during their Academy experiences. However, due to the unique interpretation that each individual derives from their own situational variables, a Class of 1999 cadet may interpret meaning differently than another classmate in the same situation.

The literature review of the sociology of religion also proved fruitful for this study. While the original expectations of the qualitative portion of the study focused on the meaning derived from the Academy experience, some cadet MEQ responses suggested significant moral judgment experience was of a spiritual nature. To understand the significance of cadet moral meaning and purpose derived from the spiritual perspective, works on the sociology of religion were consulted.

A useful source was Peter Berger's The Social Reality of Religion (1969). Berger's insight proved to be a valuable framework for grounding cadet spiritual experiences so they could be interpreted in the social context. Berger's "sacred cosmos" was pursued by certain cadets to give additional meaning and direction to his/her life. Berger's concept of sacred cosmos proposed that "a quality of mysterious and awesome power, other than man and yet related to him" resided in certain experience (Berger, 1969, p. 26). This quality "was embodied in sacred beings" which were "ultimate forces or principles ruling the cosmos, no longer conceived of in personal terms but still endowed with the status of sacredness" (Berger, 1969, p. 26). This "sacred cosmos was confronted by man as an immensely powerful reality other than himself--yet this reality addresses itself to him and locates his life in an ultimately meaningful order" (Berger, 1969, p. 26).

Max Weber (1922) aided the researcher's understanding of the subjective nature and viewpoint of religious experience--spirituality through the eyes of

cadets. Religion is understood as a socially created institution. Cadet decisions to pursue moral judgment through his/her religious upbringing suggests a socially created, spiritual institution was individualized to cadet interpretation.

Weber's philosophy was supported by the work of Horosz and Clements (1987). Horosz and Clements held that religion was a "project of human self-direction in existence"--religion provided an individualized and purposive existence (Horosz and Clements, 1987, p. 71). Through religion, individuals could find life meaning and establish goals.

Glock (1973) provided additional framework for analyzing and interpreting experience. His *objectivist supernatural* and *subjectivist supernatural* models help explain the cadet interpretations of moral transformation. An *objectivist supernatural* believer showed "literal acceptance and internalization of a supernatural interpretation of meaning set forth and objectified in doctrine, dogma, tradition and creed by an institution" (Glock, 1973, p. 14). On the other hand, a *subjectivist supernatural* "conceives of a supernatural working out for himself a meaning for his life which transcends everyday experience" (Glock, 1973, p. 14). Here, privatized interpretations are unique to the individual rather than literal acceptance of some man-made doctrine. Glock also provided a framework useful in describing moral defection, which modeled some cadet dissatisfaction with negative Academy experiences. Under Glock's concept, moral defection could be fostered by disbelief of certain institutional tenets or unsatisfying social experiences associated with the Academy character

development program. As such, individuals typically abandoned or moderated moral beliefs in favor of some other justifiable form that satisfied individualized interpretations.

Summary

This review of the literature provided insight into the domain of moral reasoning through the models of Kohlberg and Rest. The historical research focus of the field was addressed as well as the current research agenda where selected professions have chosen to integrate moral judgment research into their activities--the military academy environment represents one of these new users of moral judgment research as it renews its focus on the professional, moral, and ethical responsibilities of military officership.

A comprehensive discussion of longitudinal DIT research, usage of experiential questionnaires in moral judgment research, and empirical evidence concerning selected demographic, experiential, and cognitive variables was provided to show current agreement and disagreement concerning their relationship to moral judgment development. Additionally, each variable was discussed in the Air Force Academy context to show why continued interest exists in researching the variable and why the Academy environment provides a unique opportunity to investigate these variables further.

The theoretical assumptions of the moral judgment and DIT literature were provided to establish the framework for the quantitative portion of this

research. Finally, the theoretical assumptions of Symbolic Interactionism provided the foundation for the qualitative interpretation of cadet moral judgment responses on the MEQ.

CHAPTER 3

METHODOLOGY

The objective of this study was to observe whether changes occurred in the moral judgment scores of cadets between entry into the Air Force Academy and the spring semester of their senior year. Additional attention focused on the relationship between cadet moral reasoning scores and selected demographic variables of importance to the Air Force Academy and the domain of moral judgment research. Finally, the study sought to obtain cadet perspectives on the types of experiences that had symbolic relevance to their own individual moral judgment development.

This chapter is organized into six sections. The first section explains why the methods of this study are relevant to the objectives of the research protocol. The next section discusses the subjects utilized in the study. The third section describes and supports the instruments used to measure cadet moral judgment and gather cadet experiential inputs. The fourth section outlines the procedures utilized for administration of the instruments to the research subjects. The fifth section states the null hypotheses for the research questions. The final section describes the methods of analyses utilized for the study.

Rationale

As the review of the literature indicated in Chapter 2, longitudinal studies provide the best evidence of changes in individual moral development over time (Rest, 1979). Wood (1993) held that longitudinal studies serve to further illuminate the relationship between moral development and institutional programs such as the Academy's academic and character development programs. The current longitudinal research utilized the incoming DIT score for each cadet in the Class of 1999 and compared those scores with follow-up DIT scores obtained through this research protocol. According to Rest, "Virtually all research in the cognitive developmental tradition starts out by looking for age trends--to see if older, presumably more advanced subjects show 'higher' state responses...Without this kind of empirical support, a developmental theory does not get off the ground" (Rest, 1986, p. 28). The Air Force Academy focus on developing cadet character over four years indicates its commitment to impacting the many constructs that combine to establish the character domain.

Rest (1979) also indicates that important suggestions about crucial experiences and variables come from correlation and qualitative research. Correlation research, t-tests, and ANOVA were utilized to identify relationships between cadet DIT scores and selected institutional and demographic variables.

Perhaps most important was the inclusion of a qualitative component in this research protocol. Rest (1979, p. 220) indicates that the "years of formal higher education are a gross and imprecise variable in which many kinds of

experiences are involved, both curricular and extra-curricular.” Rest’s observations compare favorably with Kuhmerker’s concerns about capturing recruit interpretations on the importance of the character education they were receiving (Kuhmerker, 1995). These empirical concerns, coupled with the programmatic nature of the USAFA character education program, necessitated the inclusion of a qualitative instrument to allow cadet perceptions on the symbolic importance of their USAFA moral reasoning experiences.

Sample Characteristics

The population of interest for this research was the USAFA Class of 1999 (seniors at time of follow-up data collection in January 1999). A near-census of all incoming Class of 1999 cadets was conducted during the summer of 1995 by the USAFA Office of Institutional Research using the Defining Issues Test. The Class of 1999 entered the Academy with a population of 1,340 cadets. The initial (entry) administration of the DIT to the Class of 1999 resulted in 1,299 of 1,340 cadets completing the instrument for a 96.9 percent participation rate. At the time of the follow-up data collection, the Class of 1999 had a current enrollment of 966 cadets. The age of cadets at entry into USAFA is restricted to 17 to 21 years old, therefore, cadets in their senior year at the Academy range in age from 20 to 25 years old.

The primary respondents for this research were the USAFA cadets in the Class of 1999 representing the senior class (male and female college students

aged 20-25). The researcher administered the DIT and MEQ to a sample of cadets in the Class of 1999 through the MAS-440 and MAS-472 academic core courses. Of the 966 Class of 1999 cadets remaining at USAFA in 1999, a sampling frame of 398 subjects was available through the MAS-440 and MAS-472 courses (41.2 percent). With the follow-up sampling frame of 398 cadets, 327 cadets completed the DIT (82.2%) and 310 completed the MEQ (77.9%).

Discussion of the DIT later in this chapter indicates that the instrument includes a consistency check and M-score to assess whether subject data are valid and reliable. Scoring of the DIT by the University of Minnesota indicated which subjects should be purged from the sample due to excessive M-score and/or failure of the consistency check.

Of the 1,299 subjects that completed the entry DIT in 1995, 319 (24.5 percent) were purged from the sample for failing the consistency check or having an unacceptable M-score. The final number of usable incoming DIT scores for statistical analysis was 980 subjects (Table 2).

Table 2: Class of 1999 Male-Female Ratio at Entry (Summer 1995)

| | Usable Sample | | Purged | | Participant Subjects | | USAFA Class of 1999 | |
|---------|------------------|-------|--------|-------|-------------------------|-------|------------------------|-------|
| | # | % | # | % | # | % | # | % |
| Males | 822 | 83.9% | 270 | 84.6% | 1,092 | 84.1% | 1,128 | 84.2% |
| Females | 158 | 16.1% | 49 | 15.4% | 207 | 15.9% | 212 | 15.8% |
| Total | 980 | 100% | 319 | 100% | 1,299 | 100% | 1,340 | 100% |

Of the 327 subjects that completed the follow-up DIT in 1999, 54 (16.5 percent) were purged from the sample for failing the consistency check or having an unacceptable M-score. The final number of usable follow-up DIT scores for statistical analysis was 273 subjects (Table 3).

Table 3: Class of 1999 Male-Female Ratio at Follow-up (Spring 1999)

| | Usable Sample | | Purged | | Participant Subjects | | USAFA Class of 1999 | |
|---------|------------------|-------|--------|-------|-------------------------|-------|------------------------|-------|
| | # | % | # | % | # | % | # | % |
| Males | 240 | 87.9% | 45 | 83.3% | 285 | 87.2% | 825 | 85.4% |
| Females | 29 | 10.6% | 9 | 16.7% | 38 | 11.6% | 141 | 14.6% |
| Unknown | 4 | 1.5% | 0 | 0.0% | 4 | 1.2% | 0 | 0.0% |
| Total | 273 | 100% | 54 | 100% | 327 | 100% | 966 | 100% |

Of the 327 subjects that completed the follow-up DIT for the paired-samples, 126 were purged for failing the consistency check (entry or follow-up DIT), having an unacceptable M-score (entry or follow-up DIT), or unavailability on incoming DIT data on the subject. The final number of usable pairs of matched DIT scores (entry and follow-up) for statistical analysis were 201 subjects (Table 4).

Table 4: Class of 1999 Male-Female ratio for Matched Pairs (1995 & 1999 DITs)

| | Usable Sample | | Purged | | Participant Subjects | | USAFA Class of 1999 remaining at 4-years | |
|---------|------------------|-------|--------|-------|-------------------------|-------|---|-------|
| | # | % | # | % | # | % | # | % |
| Males | 181 | 90.0% | 105 | 83.3% | 286 | 87.5% | 825 | 85.4% |
| Females | 19 | 9.5% | 19 | 15.1% | 38 | 11.6% | 141 | 14.6% |
| Unknown | 1 | 0.5% | 2 | 1.6% | 3 | 0.9% | 0 | 0.0% |
| Total | 201 | 100% | 126 | 100% | 327 | 100% | 966 | 100% |

A slightly lower participation rate was realized on the MEQ. This slight deviation in participation rate was likely attributed to a stringent statement contained on the informed consent document (Appendix C). Military legal authorities required a Uniformed Code of Military Justice (UCMJ) statement on the informed consent document stipulating disciplinary action for subjects providing personal identification coupled with implicating statements related to criminal conduct or honor code violations. The researcher attempted to prevent this statement from being included on the informed consent document in order to preserve confidentiality and anonymity. The researcher reminded all subjects not to include personal identification on the MEQ to preserve his/her anonymity.

Cadets in the MAS-440 and MAS-472 courses were exposed to research recruitment in the following manner. The informational phase occurred at the end of a scheduled academic period on a preceding lesson. Potential subjects

viewed a five-minute video of the primary researcher explaining the purpose of the research and research subject rights (informed consent and voluntary participation) and responsibilities. Cadets also received a cover letter explaining the research providing information on how the primary researcher could be contacted with questions or concerns (phone, electronic mail, and office location). Cadets were informed where to report for their next assigned academic lesson (when the research instruments would be administered). On the dates of planned administration, the informational phase continued as potential subjects had the opportunity to voice questions or concerns.

After potential subjects had an opportunity to voice questions and concerns on the day of data collection, the informational phase ended and the enrollment phase began. Cadets in attendance located an informed consent letter (2 copies) and the research instruments (DIT and MEQ) in front of them. Upon agreeing to participate in the study, they signed the informed consent form and had it witnessed by another cadet seated near them. Cadets kept one copy of the informed consent form. Upon completion of the informed consent form, the researcher explained the instrument instructions via a script and overhead slides. After last minute procedural questions were fielded, the subjects completed the DIT and MEQ. They submitted the items upon completion. A fifty-minute period was allotted for data collection. Subjects completed the instruments in 25 to 45 minutes.

Cadets choosing not to participate were not pressured or penalized. No faculty or chain-of-command representatives were at the testing location. Non-participants simply remained in the lecture hall using it as a study period.

The USAFA Registrar randomly assigned cadets to the MAS-440 core course for the Fall 1998 and Spring 1999 semesters. All Class of 1999 cadets must complete the core MAS-440 course or one of its core substitutes to graduate from USAFA. Approximately forty percent of the Class of 1999 was represented by each semester (Fall 98 and Spring 99) of the core MAS-440 course. The remaining twenty percent of the Class of 1999 enrolled in MAS-440 core substitute courses such as the MAS-472 course designed for cadets in formal leadership positions. Assignment to the semester and section of the MAS-440 core course is a random selection and assignment process orchestrated by the USAFA Registrar. The portion of the Class of 1999 enrolled in MAS-440 during the spring 1999 semester was representative of the greater class population based on the randomized assignment process. Cadets enrolled in MAS-472 were identified by virtue of their assigned formal leadership roles in the Cadet Wing structure (wing, group, and squadron commanders).

Due to the longitudinal nature and multiple variables of interest for this research (gender, geographic region of parental domicile, waiver status, USAFA graduate status of parents, prior military service, and age), a significant sample of cadets in the Class of 1999 was intended for follow-up administration. Nearly all Class of 1999 cadets completed the DIT at entry into USAFA (1,299 of 1,340

cadets). The raw incoming DIT data on the 1,299 cadets was obtained through Academy archives.

To facilitate access to as large a follow-up sample as possible and to ensure similar testing conditions between incoming and follow-up data collection, the researcher pursued administration of the research instruments through a senior-level core academic course. The researcher obtained follow-up access to Class of 1999 cadets through the MAS-440 and MAS-472 courses. Access to the Class of 1999 cadets through the core courses was important for a number of reasons. First, senior-level core courses represented a random sample and assignment of Class of 1999 cadets. The USAFA Registrar randomly selects and assigns cadets to senior-level core courses for the Fall and Spring semesters. Second, the researcher wanted to match testing conditions between the entry and follow-up data collection. Academic lectinars were utilized for group administration of instruments during the summer 1995 data collection. Utilizing a core course academic period enabled the researcher to replicate the testing conditions in the same lectinars during a fifty-minute class period. Finally, the core courses provided access to 41 percent of the remaining Class of 1999 population (398 of 966 cadets) in their final semester of Academy attendance.

Follow-up participation from the cadets enrolled in MAS-440 equated to 312 (out of 353 for 88.3% participation) and 15 cadets enrolled in MAS-472 (out of 45 for 33.3% participation). Adequate power for statistical inference concerning the variables of interest was available from the obtained sample from

the Class of 1999 (n=327 out of a Class of 1999 remaining population of 966 for a sampling of 33.9%). Of the 327 subjects participating in the follow-up administration, 273 subjects had usable DIT scores. Matched pairs of incoming and follow-up DIT scores were obtained on 201 subjects for the Class of 1999.

Statistical analysis of the research results relied on the validity of assumptions and/or robustness to violations of assumptions. The stated analyses for this study included both quantitative and qualitative methods. The quantitative methods included correlation, t-tests, and ANOVA. The assumptions for these methods include normality, homogeneity of variance, and independence of observations.

The assumption was made that moral reasoning scores were normally distributed for the cadet population. The near-census of cadets at entry and large follow-up DIT sample size ensured that any violations of normality remained robust. Non-normality has negligible consequences on error probabilities unless sample sizes are very small, usually fewer than 25. The overall sample sizes for this study exceeded recommended levels to ensure normality. Histograms of incoming and follow-up P-scores and N2-scores indicated normal distribution of scores in the two samples.

The equal variance assumption can safely be violated if the sizes for each sample remain equal. This longitudinal analysis was unable to conduct a follow-up census of Class of 1999 cadets with the DIT. Since unequal sample sizes evolve from the study (based on a smaller follow-up sample and unequal group

sizes concerning demographic variable categories) and result in a violation of this assumption, the Welch's t-test and Welch and Brown-Forsythe modifications of ANOVA enable analysis of unbalanced designs. Utilization of a paired-samples t-test for analysis of longitudinal change in P and N2 scores indicated matched pairs of scores for 201 subjects in the Class of 1999.

Independence of observations between groups was valid in this study. The moral reasoning scores obtained from each sample remained independent from one another in the correlation analysis and t-tests of independent samples. In the case where moral reasoning scores were not independent, such as the longitudinal analysis of paired DIT scores for the class of 1999, a t-test for paired observations was utilized.

The majority of cadet subjects utilized for this study were students in the MAS-440 core course during the spring 1999 semester. Students were randomly assigned to the core course by the USAFA Registrar and represent a cross-section of all variables associated with their cadet cohort. Forty-five Class of 1999 cadets enrolled in the MAS-472 course were also included in the study. These cadets were unique from other Class of 1999 subjects because they filled formal leadership positions/roles as squadron, group, or wing commanders. Cadet commanders complete MAS-472 as a core substitute to MAS-440. As a combined sample, the MAS-440/MAS-472 cohort is representative of the greater Class of 1999 population at USAFA. Independently, the MAS-440 and MAS-472 samples enabled the researcher to make group distinctions between senior

cadets in command/leadership positions and senior cadets not in command/leadership positions.

Instruments

Data concerning the background variables of interest and the entry DIT scores were located in information-rich archives maintained at the Academy. In order to collect the remaining information for this research project, two data collection instruments were utilized. The follow-up research data collection was conducted using the DIT and the Moral Experience Questionnaire (MEQ). The DIT (Appendix A) was used to measure moral judgment in the Class of 1999 cadet cohort. The short MEQ (Appendix B) was used to obtain cadet input on the experiences they perceive contributed to, or restricted, moral development.

Defining Issues Test (DIT)

The Defining Issues Test (DIT) was designed and validated by James Rest as an objectively-scored alternative to Lawrence Kohlberg's subjectively-scored Moral Judgment Interview (Rest, 1974). It is designed to obtain various stage scores and indexes relating a subject's choice of moral considerations to Kohlberg's model of moral development. The DIT has been used extensively in moral judgment research (Rest, 1979 and 1986). It has been utilized at USAFA since the Office of Institutional Research began administering the instrument to incoming cadets starting with the Class of 1998 during basic cadet training in

1994. Empirical research indicates that the DIT is supported by validity and reliability evidence which will be discussed in greater detail later in this chapter (Rest, 1979 and 1986).

The DIT has predominantly been utilized in research in two versions. The full version consists of six moral dilemmas and the shortened version consists of only three dilemmas (Heinz and the drug, escaped prisoner, and the newspaper). In both versions, respondents rate the relevance of a list of moral considerations and then rate the top four of twelve considerations. The three-dilemma version of the DIT was utilized in this study and is available for review at Appendix A.

Scoring of the DIT reveals a number of stage scores and indexes representing levels of moral consideration utilized by the subject. When properly scored, output includes the subject's stage scores for each level of Kohlberg's moral development model, the P-index, the N2-index, the M-score, and the consistency check.

The primary indexes utilized for this study are the P-index and N2-index (NewIndex). The P-index represents the relative importance participants give to principled moral considerations in their decision-making (Kohlberg's stages 5 and 6). The P-index is derived from subject rankings of the top four most important considerations for each dilemma story. The P-index disregards a large portion of subject data obtained on the DIT. The P-index fails to incorporate the rating data that is also captured on the DIT. The P-index is scored on a scale

from 0-95 representing the percentage of principled considerations utilized by the subject (Rest, 1979). The percentage scale for P-score is 0-95 (not 100 percent) because there are not four possible P items in each dilemma (Rest, Thoma, Narvaez, and Bebeau, 1997b). Moral judgment development theory in the college environment contends that individuals will increase in their usage of principled moral considerations.

One of the past critiques of the P-index is that it disregards a significant amount of useful subject data contained on the DIT. The P-index ignores the rating data of moral considerations that subjects provide. Recently, a new index in DIT research was created (Rest, Thoma, Narvaez, and Bebeau, 1997b). The N2-index (NewIndex) is similar to the P-index as an overall index of the percentage of principled moral reasoning utilized by the subject. It is scored on the same percentage scale as the P-index. The N2-index utilizes the same rankings of moral considerations as the P-index uses. In addition, however, the N2-index uses the rating data in scoring. In utilizing the rating data, the N2-index is intended to be a more complete index than P-score. N2 is a measure of prioritizing the higher stages of moral reasoning (like P-score) and a measure of discrimination and rejection of lower stages (Rest, Thoma, Narvaez, and Bebeau, 1997b).

Rest, Thoma, Narvaez, and Bebeau, (1997b) contend that the new index is a better index of principled moral reasoning indicating better trends in secondary analyses of previous studies. This study represents one of the initial,

if not the first, doctoral dissertation to include the N2-index with the P-index in analysis of college student moral judgment.

Individual stage scores are also available from the DIT. Scoring provides the relative importance subjects place on each stage of Kohlberg's moral development model when making moral decisions (Rest, 1990). Individual stage scores provide the opportunity to establish an entry and follow-up stage profile on the Class of 1999. This stage profile can be compared to other group profiles available in the literature. Group change in stage scores can also be analyzed to determine how the Class of 1999 changed during the longitudinal study.

The M-score was designed to measure a subject's selection of lofty-sounding, but meaningless items on the DIT (Rest, 1990). Rest included this index in the scoring as a way of flagging subjects who selected items based on the important sounding verbiage included in the consideration choices. Rest recommends that subjects who score over six on M-score (for the three story DIT) should be removed from the protocol due to suspicion of improper test-taking mindset (Rest, 1990).

The consistency check is another indicator designed to measure the usability of a subject's DIT data (Rest, 1990). Here, the analysis measures the level of consistency between ratings and rankings of an item on the DIT. There should be consistency between items rated of great importance and the four considerations ranked as most through fourth most important. A situation where a subject has inconsistency between rankings and ratings indicates the subject

either misunderstood the instructions or is not taking the DIT seriously.

Incorporation of the DIT in this longitudinal study provides information on the development of cadet moral judgment during the Academy officer development program. The researcher used the three-dilemma version of the DIT due to institutional restraints on the amount of time allowed for data collection. Completion times for the DIT range from 25 minutes to 50 minutes depending on the version selected (three-dilemma version versus six-dilemma version).

Rest's DIT presents six dilemmas to the subject. Each dilemma requires the subject to rank-order possible solutions to the dilemma, then rate the four most important issues to solving the dilemma. Since the instrument is a choice process rather than a production process (Kohlberg's Moral Judgment Interview), the DIT provides the researcher with "choices" which represent the considerations the individual has chosen as his/her solution to the dilemma based on his/her individual moral reasoning. Each of these choices can be categorized according to a particular stage and level within the Kohlberg/Rest moral development models. This provides an objective process for categorizing the subject's moral judgment.

Referencing the Defining Issues Test

The DIT represents a criterion-referenced instrument due to its foundation in Kohlberg's stage/level theory of moral development. Kohlberg's theory serves

as a foundational framework providing a well-defined and ordered domain for moral judgment development. The domain is well defined because each stage and level provides independent, moral decision behaviors which the researcher can use to categorize the subject's responses and relate to the formal moral theory. Additionally, both Kohlberg and Rest have argued that the moral domain is developmentally ordered so that an individual increases in moral reasoning or plateaus, but never declines from a higher level/stage. A subject must develop hierarchically through each stage as there is no skipping of developmental stages. In using this well-defined and ordered domain, the researcher could score the subject's responses to identify the relative importance the subject selected at each stage/level along the moral development continuum.

While the DIT was designed and constructed using criterion-referenced philosophy, the large body of empirical research using the DIT also provides opportunities for norm-referenced comparisons of results. According to Rest, the DIT had been used in over 500 studies by 1986 (Rest, 1986). As a result, evidence related to moral judgment development existed for a variety of population types. Empirical evidence using the DIT exists for children, adults, high school-aged students, college students (across different types of colleges and at different levels of formal education), criminals, different cultures, etc. Using the results of studies that had well-defined populations provided additional comparison data on how moral judgment development (as measured by the criterion-referenced DIT) could be norm-referenced to see how populations

related to one another or how an individual stood compared to others within their own population.

While the brunt of research focuses on the criterion-referenced utility of the DIT, the norm-referencing issues provide rich information on development among different populations. This is an important factor as one would expect to see developmental differences among populations that varied based on key variables such as age and educational level.

DIT Validity

Using Anastasi's discussion of validity as a framework, there are a number of validity types that one would expect to find in the criterion-referenced DIT (Anastasi, 1988). One would expect that an instrument measuring moral reasoning would display outward signs of face validity through some form of moral conflict. While not an achievement test per se, one would also expect some evidence of content-related validity that is necessary in criterion-referenced tests (Anastasi, p. 44). In reference to criterion-related validity, the DIT should show concurrent validity over predictive validity due to its usage as an instrument to identify moral judgment development. Most importantly, the DIT should report evidence of construct validity. Here, evidence is expected concerning correlation with other tests, developmental changes, convergent and discriminant validity, and experimental interventions (a measurement of moral judgment would reasonably be expected to support these forms of validity).

While face validity is not an empirical form of validity, it is important in research for subjects to take it seriously (Anastasi, p. 144). It is important that the DIT appears to measure moral judgment rather than some other construct. According to Rest, the use of moral dilemmas provides the outward appearance of a measure of moral decision making as opposed to using psychological devices such as the Rorschach inkblot (Rest, 1979, p. 98). Rest also included the M-index and consistency check to ensure that subjects were completing the DIT in the correct testing mindset. Rest included meaningless statements as possible subject choices. If subjects selected too many meaningless items, their DIT was rejected. Additionally, the consistency check was designed to ensure similarity between subject ratings and rankings. If rankings and corresponding ratings diverged too often, the DIT was rejected.

The issue of content-related validity is important to the DIT as a criterion-referenced instrument. Because the test items must relate to the Kohlberg model of moral development, decision choices must be offered so that subjects can be placed at any point along the moral judgment continuum. Upon examination of the DIT, it was apparent that the decision options open for subject selection did provide a reasonable sample of the elements required for decisions based on each level of Kohlberg's model. Depending on how the student rated/ranked the choices, the content could be translated and scored to Kohlberg's model.

One validity area that empirical evidence was lacking was criterion-related validity. While the DIT is used as an instrument for concurrent comparisons (relating current subject development to the moral development model), no extensive comparison as to its concurrent/predictive strengths were offered. Part of this lack of criterion related discussion stems from Rest's choice to pursue and evaluate the DIT separately from Kohlberg's Moral Judgment Interview (MJl). One would hope that the DIT and MJl similarly categorize respondents based on their inputs. Rest specifically tried to remain independent of the MJl because of its subjectively scored format and lack of consistent measurement (Rest, 1974, p. 492). Correlation between the MJl and DIT has varied over time. One correlation was reported as .68 (Bryson, 1980, p. 34.).

The most discussed area of validity with the DIT is construct validity. Areas such as the developmental/longitudinal changes, convergent and discriminant validity, and changes associated with experimental intervention are important here.

Rest reports on criterion group validity where different populations should score different on the DIT. Evidence showing how DIT scores differ (statistically significant) based on populations that differ in important contributing variables is relevant here. Rest showed how juvenile delinquents scored lower than high school students. He also provided evidence on how different segments of the population scored differently based on age and level of education. Graduate students indicated higher moral reasoning scores than undergraduates and non-

educated adults lower than educated adults (Rest, 1990, p. ii; Wood, 1993, pgs. 49-50).

Developmental/longitudinal change was reported by Rest as well (Rest, 1979, 1986). Rest showed through numerous studies how the same group was followed and retested longitudinally. These studies showed increased age/education trends associated with increases in moral judgment development.

Rest also provided empirical evidence supporting experimentally-induced change as measured by the DIT (Rest, 1979, p. 157). Using variables that were closely related to moral judgment growth such as exposure to discussion of moral dilemmas and exposure to individuals with higher moral reasoning levels, Rest measured how DIT scores changed for individuals exposed to the intervention, yet remained constant for the control group.

Convergent and discriminant validity evidence was provided as well. Rest reported convergent validity through correlation with closely related moral variables in the .60-.70 range (Rest, 1979, p. 248). Discriminant validity was evidenced by low correlation between the DIT and other variables that should stand independent of moral reasoning. Variables such as IQ, aptitude, and achievement showed low correlation in the .20 to .50 range (Rest, 1979, p. 248).

DIT Reliability

Nitko's discussion of reliability provides a suitable framework for evaluating the reliability of the DIT (Nitko, 1983). When evaluating reliability of

the DIT on a single occasion, over time, and with scorer reliability, one would expect to see evidence supporting its consistency as a measure of the moral judgment construct.

On a single occasion, the most useful evaluation procedure is Cronbach's alpha (over KR 20/21) because the DIT involves ranking/rating moral judgment considerations rather than dichotomously selecting options (Nitko, 1983, p. 396). Over time, since the moral judgment construct is developmental in nature, one would expect to see high correlation between two testings over a short duration and lower correlation between testing separated by a longer period of time. Reasonable test-retest observations should be apparent (Nitko, 1983, p. 397). Scoring reliability is not as much of a concern using the DIT due to its objective scoring procedures. This serves as an improvement over Kohlberg's Moral Judgment Interview that suffered low reliability between scorers due to its subjective scoring procedures. Finally, the researcher expected some evidence using the Spearman-Brown formula as discussion of a shortened version of the DIT appears in the literature (Nitko, 1983, p. 403).

Single occasion reliability of the DIT was evidenced by reported Cronbach Alpha figures in the high .70s (Rest, 1997, p. 22). Rest admits that this is not an outstanding level of internal consistency, but that it is adequate for this type of measure.

Over time reliability is similar to the developmental/longitudinal evidence offered for construct validity. Nitko argued that over time reliability should be

evidenced by consistency in test scores over short duration and inconsistency in test scores over longer duration (Nitko, p. 404). Rest discusses multiple studies using longitudinal test-retest of varying duration. When associated with developmental change and other interventions, Rest showed that statistically significant changes were measured over greater periods of time and in relation to key variables such as interventions, age, and education--.71-.92 range for test-retest reliability (Rest, 1979, p. 239). Rest concluded that the effects of repeated testings with the same DIT stories do not appear serious when the null hypothesis states that there will not be any change (Rest, 1990, p. 5.3). Rest indicated that real change in moral judgment was evidenced by longer periods between testings.

James Rest (1990) provided insight into standard error of measurement change scores to determine if developmental change was significant. In order to avoid interpreting measurement error as significant change in moral reasoning, Rest determined the average margins of measurement error for each moral reasoning stage and scoring index. He established change score gains indicating whether meaningful longitudinal change occurred. According to Rest, meaningful change occurs on the three-story DIT when differences in longitudinal testings exceed 3.8 points for stage 2, 5.2 points for stage 3, 5.2 points for stage 4, 5.0 points for stage 5A, 2.1 points for stage 5B, 2.6 points for stage 6, and 9.7 percentage points for P-score (Rest, 1990, p. 5.3).

At the time of this writing, Rest and his associates have not determined the standard error of measurement to signify meaningful change in N2-score between longitudinal testings. This researcher discussed the issue at length with Christyan Mitchell, a researcher at Rest's Center for the Study of Ethical Development at the University of Minnesota. According the Mitchell, N2-score and P-score correlate in the high .90s. Mitchell also indicated that since N2-score and P-score are consistently and highly correlated, researchers should use the P-score standard error of measurement when analyzing N2-scores (Mitchell, personal communication, March 26, 1999). Correlation of N2-score and P-score in this research indicated that the indexes correlated highly and significantly ($r=.94$, $p<.0001$). Based on the high correlation between the scoring indexes, this researcher utilized the 9.7 standard error of measurement for N2-score.

Direct evidence of scorer reliability was not available for the DIT. Instead, Rest discussed the lack of scorer reliability associated with the MJJ. The MJJ is a subjectively scored instrument of moral judgment suffering from inter-rater reliability effects. Different raters may interpret subject responses differently. The DIT uses an objective, formula scoring format that enables the results to be machine scored. This alleviates human-error/variance in scoring other than miss-marked answer sheets and improper scoring procedures by scanning personnel.

The final area of reliability discussion associated with the DIT is the use of the Spearman-Brown formula (Nitko, 1983, p. 403). The traditional DIT is a six-

dilemma instrument, however, a 3-dilemma version is also used to shorten the time associated with the instrument. The three stories in the short form (Heinz, Prisoner, and Newspaper) were chosen on the basis of their having the highest correlation of any 3-story set with the full 6-story version (Rest, 1990, p. 5.7). Here, Rest reports a P-score correlation between the two forms at .93 (Rest, 1990, p. 5.7).

As a construct, moral reasoning has experienced rapid empirical investigation for the last three decades. The Kohlberg model of moral development and the Rest variant serve as a solid theoretical foundation for further empirical research. The DIT serves as an instrument designed to measure moral reasoning development and has successfully withstood validity and reliability challenges concerning the moral reasoning construct. Investigation of the DIT revealed that it provided empirical data to support the types of validity and reliability expected from the measure. In the few areas where stated evidence was unavailable, philosophical assumptions about the instrument made Rest's conclusions reasonable and acceptable for this research.

Moral Experience Questionnaire

A short Moral Experience Questionnaire (MEQ) was also administered to the sample of cadets from the Class of 1999. The questionnaire was brief and open-ended in format (Appendix B). Cadets were asked to provide some limited

demographic information for research purposes. The major focus of the questionnaire was to obtain subjective inputs from cadets with relationship to their perceptions of the USAFA experiences that contributed to, or restricted, their moral judgment. In laymen's terms, the researcher wanted to determine what USAFA experiences cadets perceive aided, or hurt, moral judgment development. In the past, researchers utilized closed-ended checklists to identify student experiences related to moral judgment development (Trull, 1990; Volker, 1979). This researcher contended that a closed-ended experiential questionnaire would limit respondents to the researcher's perception of key events.

The open-ended MEQ would allow cadets to identify the experiences that he/she deemed relevant to their moral judgment development. The researcher incorporated content analysis to code and identify experiential themes in cadet responses. The open-ended nature of the instrument prevented concrete hypothesis of results, however, certain programmatic experiences, moral dilemma discussions in courses, and first-hand experience with honor issues represented the types of experiences that cadets might identify.

Using generic moral experience instruments as a prototype, the researcher created an open-ended moral experience questionnaire customized to USAFA experiences (Biggs and Barnett, 1981; Deemer, 1989; Rest, 1979 & 1986; Rice, 1986; Spickelmier, 1983; Volker, 1979; and Whiteley, 1980). The intention of the MEQ was to capture cadet inputs on their perceptions of the

subjective factors or USAFA experiences that have influenced their moral development. The open-ended questions inquired as to what types of experiences contributed to a cadet's perceived moral development such as dilemma discussions, leadership programs, exposure to honor violations, interaction with peers/faculty, ethics lessons, summer programs, survival training, etc.

The MEQ represents a self-report research tool designed to collect demographic and experiential inputs from respondents. Self-report instruments of this nature are considered accurate sources of information concerning a subject's behavior, thoughts, and feelings (Garfield & Bergin, 1978).

Procedure

The methods for this study included paper and pencil completion of the DIT and MEQ by a large sample of cadets from the Class of 1999. The administration of the DIT and MEQ to Class of 1999 cadets occurred through the MAS-440 core course and the MAS-472 core substitute course for cadet commanders. MAS-440 is a senior level core course on Joint Military Operations required of all graduating cadets. The course enrolls approximately forty percent of the senior class cadets during the fall semester and an additional forty percent during the Spring semester. Cadets are assigned to the semester and class section randomly by the USAFA Registrar. MAS-440 enrolled 353 senior cadets during the spring 1999 semester. MAS-472 is a core substitute for MAS- 440.

Enrollment in MAS-472 is limited to the 45 cadet commanders identified in formal wing, group, or squadron commander positions each semester.

Cadets in the MAS-440 and MAS-472 courses were administered the DIT and MEQ during a regular 50 minute academic class period. A specific lesson was reserved for administration of the instruments. Subjects completed the DIT and MEQ during their assigned MAS period in an assigned academic lectinar. The researcher administered the instruments to the MAS-440 cadets and enlisted the support of a colleague to administer the instruments to the smaller sample of MAS-472 cadets (n=15).

Recruitment of cadet subjects occurred over two separate occasions. Subjects were informed of the research at the completion of a normal class period. Potential subjects viewed a short video in which the primary researcher explained the research and its importance. The informational period also included distribution of the research cover letter where potential subjects were informed of the research and how they could contact the primary researcher with questions/concerns.

The informational phase of subject recruitment ended at the beginning of the assigned lesson where cadets reported to the administration site. Cadets were seated at which time the primary researcher answered any research concerns. At this point the informational phase ended and the enrollment phase began. Cadets choosing to participate signed an informed consent document (Appendix C) and had it witnessed by a neighboring cadet. They retained one

copy of the Informed Consent form and submitted the witnessed copy. Cadets choosing to participate then completed the DIT and MEQ. Cadets choosing not to participate remained at the testing location utilizing the period as a study hall.

During the day of research enrollment, cadets in MAS-440 and MAS-472 reported to their assigned location where they were greeted by the researcher (the researcher's representative for MAS-472). Cadets were reminded of the nature and importance of the research. Cadets were instructed how to complete the Defining Issues Test and Moral Experience Questionnaire. They were directed to read the informed consent letter at which time they chose to participate or not participate in the study. If they chose to participate in the study, they completed the informed consent letter, the Defining Issues Test and the Moral Experience Questionnaire, also providing their social security number with the DIT for identification purposes with relationship to background variables of interest. Upon completion of the instruments, they returned the informed consent letter, DIT, and MEQ to the researcher or his designated representative.

Readministration of the DIT to the cadet cohort during the spring 1999 semester provided follow-up moral judgment development scores on the cadets. This second administration provided longitudinal, correlation, and group-comparison opportunities for analysis.

Institutional data representing the key variables identified for this research were maintained in the Academy archives and were retrieved through electronic means. Information maintained on the individual students included incoming DIT

raw scores, demographic data, academic information, military performance scores, and conduct and honor violations. Archival data is appropriate when data pertinent to the research already exists, as long as the researcher considers that any biases that occurred during initial data collection affects the current research (McBurney, 1990).

The DIT scores on the Class of 1999 were the population of interest when determining the relationship between moral judgment and the demographic variables of interest. The Class of 1999 provided an opportunity to observe how these variables relate to cadet moral reasoning upon entry into the Academy as well as just prior to graduation.

While the DIT provides quantitative information concerning the qualitative levels of moral judgment, research in the Academy environment would be incomplete without inclusion of cadet input concerning the Academy experiences that contributed to their moral judgment (either positively or negatively). As a result, the short, open-ended questionnaire (MEQ) was administered along with the DIT. Students could provide input concerning the specific types of Academy experiences they perceive contributed to their moral development. This information was useful in comparing student and institutional perceptions with empirical research findings as to what experiences contribute to moral reasoning development.

Null Hypotheses

The research questions and their corresponding null hypotheses represent the demographic variables, experiences, and Academy populations identified for the present study. These questions emanate from a review of the moral judgment literature and the unique higher education environment the Academy represents.

1. Are there longitudinal changes in cadet moral judgment from entry into USAFA to completion of the 4th year (Class of 1999 cohort) of Academy education? This question will investigate changes in overall P-score, N2-score, or stage scores using the DIT.

Null Hypothesis 1: There are no longitudinal changes in cadet moral judgment scores from entry into USAFA to completion of the 4th year (Class of 1999 cohort) of Academy education (DIT P-score, N2-score, or stage scores).

2. Is there a relationship between moral judgment at entry (entry DIT) and completion/non-completion of 4 years of Academy education (Class of 1999) with relationship to Honor Violation (lying, cheating, stealing, tolerating), Conduct, Academic, Athletic or Self-Initiated Elimination (SIE) dismissals?

Null Hypothesis 2: There are no group differences in moral judgment at entry (entry DIT scores) with relation to completion/non-completion of Academy education (Class of 1999). This hypothesis delineates groupings by completion and attrition status further delineating attrition status by attrition reason with relationship to Honor Violation (lying, cheating, stealing, tolerating), Conduct, Academic, Athletic or Self-Initiated Elimination (SIE) dismissals.

3. Can differences in moral judgment development be distinguished by the age of the cadet for the Class of 1999?

Null Hypothesis 3: There will be no age group differences in moral judgment (DIT score) for Class of 1999 cadets at entry or during their senior class year.

4. Can differences in moral judgment development be distinguished by U.S. region of parental domicile for cadets in the Class of 1999?

Null Hypothesis 4: There will be no geographic group differences in cadet moral judgment (DIT score) at entry based on geographic region of cadet's parental domicile.

5. Can differences in moral judgment development be distinguished by Prep School attendance status for cadets in the Class of 1999?

Null Hypothesis 5: There will be no group differences in moral judgment (entry and follow-up DIT scores) between cadets who attended the USAFA Prep School and those that did not.

6. Can differences in moral judgment development be distinguished by cadet gender for students in the Class of 1999?

Null Hypothesis 6: There will be no group differences between cadet moral judgment (entry and follow-up DIT score) and cadet gender.

7. Can differences in moral judgment development be distinguished by cadet MPA for students in the Class of 1999?

Null Hypothesis 7: There will be no correlation between cadet moral judgment (follow-up DIT score) and military performance average (MPA).

8. Can differences in moral judgment development be distinguished by cadet GPA for students in the Class of 1999?

Null Hypothesis 8: There will be no correlation between cadet moral judgment (follow-up DIT score) and grade point average (GPA).

9. Can differences in moral judgment development be distinguished by military academy graduation history of the cadet's parents or siblings for Class of 1999 members?

Null Hypothesis 9: There are no group differences in cadet moral judgment (entry and follow-up DIT score) with relationship to the military academy graduation status of a cadet's parents or siblings.

10. Can differences in moral judgment development be distinguished by entrance waiver status for cadets in the Class of 1999?

Null Hypothesis 10: There are no group differences in cadet moral reasoning (entry and follow-up DIT score) with relationship to entrance waiver status.

11. Can differences in moral judgment development be distinguished by a cadet's prior military service status for students in the Class of 1999?

Null Hypothesis 11: There are no group differences in cadet moral reasoning (entry and follow-up DIT score) with relationship to prior military service history.

12. Are there differences in senior class (Class of 1999) cadet moral reasoning (DIT scores) based on senior class leadership position status/experience?

Null Hypothesis 12: There are no group differences in cadet moral reasoning (follow-up DIT score) with relationship to senior leadership position status.

13. What USAFA and non-USAFA experiences do cadets in the Class of 1999 cohort identify as contributing to or restricting their moral judgment development during the four years of Academy attendance?

Hypothesis 13: Cadet responses on the MEQ will indicate that USAFA programs and courses directed at ethical and moral growth and living under the Academy Honor Code provided the most stimulus to their moral development.

Methods of Analyses

Analysis of the data for this longitudinal and descriptive study was accomplished using correlation, paired t-tests, independent samples t-tests, ANOVA, and qualitative content analysis for cadet responses to moral experiences (Bogdan & Biklen, 1992; Gay, 1996; Glass & Hopkins, 1996;

Krathwohl, 1993; and Tate, 1996). An alpha of .05 was used throughout the study for the quantitative analyses. Each analysis technique will be discussed with relationship to the research question(s) it answers.

Research question 1 was answered using t-test analysis of paired results utilizing incoming and follow-up DIT scores (n=201). The paired t-test allowed the researcher to determine the significance of mean differences (Glass & Hopkins, 1996) between the two administrations of the DIT (at entry and the four-year follow-up for the Class of 1999). Shaver (1984) and Bridges and Priest (1983) utilized this analysis technique effectively in their respective longitudinal studies. Paired samples t-tests were utilized to analyze changes in P-score, N2-score, and stage scores.

Research question 2 utilized an independent samples t-test and ANOVA to determine whether differences in entry DIT means existed for those cadets who remained enrolled at the Academy versus those who resigned/were dismissed. Subjects were classified two ways for these analyses. One categorization dichotomously divided subjects by those who remained versus those who departed. Another categorization more accurately coded subjects by their actual departure codes versus a classification code for subjects remaining at USAFA.

Correlation, independent sample t-tests and ANOVA were utilized to answer research questions 3 through 11 (Glass & Hopkins, 1996; Hair, Anderson, Tatham, and Black, 1992; Kachigan, 1982; and Tate, 1996). The

purposes behind these research questions were to provide additional insight into the relationship between selected demographic variables and cadet moral reasoning scores. The Class of 1999's entry and follow-up DIT scores were used since they offered the most complete observation of moral development over the four-year Academy program. Each demographic variable was correlated with entry or follow-up DIT scores or was used as a grouping variable. The analyses indicated which correlation or grouping variables were significant upon entry to, or graduation from, USAFA. Numerous studies have been conducted correlating DIT scores to other demographic variables in the college environment (Guldhammer, 1982; Hooper, 1994; and Quarry, 1997).

Research question 12 incorporated an independent samples t-test to determine whether there was a significant DIT score difference in group means between Class of 1999 cadets who held leadership positions (wing commander, group commanders, and squadron commanders) and senior cadets who did not hold leadership positions.

Finally, qualitative research methods (content analyses) were used to analyze the data obtained for research question 13. The MEQ responses were analyzed using the theoretical assumptions of Symbolic Interactionism outlined in Chapter 2. Here, the open-ended MEQ questionnaire provided qualitative cadet responses concerning his/her perceptions of the USAFA experiences that contributed to his/her moral development. These responses were reviewed, coded, and analyzed to obtain experiential and moral development themes as

identified by the subjects (Bogdan & Biklen, 1992). More emphasis on how the emerging themes were identified and analyzed will be provided in chapter four.

Summary

This chapter outlined why the longitudinal, correlation, and qualitative methods chosen for this study are relevant to the objectives of the research protocol. It also discussed the USAF Academy Class of 1999 as the population of interest. The instruments including the DIT and MEQ were identified, described, and supported for utilization with this study. A discussion of Rest's Defining Issues Test was provided to establish its usefulness, reliability, and validity as a measure of the moral judgment construct. The MEQ was utilized to obtain cadet perceptions on important moral judgment experiences in order to investigate Kuhmerker's concerns about capturing recruit interpretations of character education programs. The data collection procedures for recruitment of subjects and administration of the instruments were outlined to show how Class of 1999 cadets in the MAS-440 and MAS-472 courses participated in the study. The null hypotheses for the research questions were presented. Finally, the methods of data analysis were presented to identify which quantitative and qualitative techniques were best utilized in the study.

CHAPTER 4

RESULTS

This chapter contains the statistical analysis of the DIT scores and demographic data. Additionally, qualitative analysis of the MEQ responses is provided. This chapter is divided into two major sections.

The first section reports the data for the longitudinal and comparative portions of the study. This first section is divided into thirteen parts. Initially, it summarizes the demographic data and descriptive statistics for the entry DIT sample, follow-up DIT sample, and paired-DIT scores sample. The remaining twelve parts of the first section present the statistical analyses for research hypotheses 1 through 12 listed in Chapter 3.

The second section provides qualitative analysis of the open-ended cadet responses on the Moral Experience Questionnaire (MEQ). This second section is divided into seven parts. The first part reports the demographic data relevant to the MEQ administration. The next six parts provide analysis of one closed-ended and five open-ended questions asked on the MEQ.

Demographic Data and Descriptive Statistics

Three different samples from the USAFA Class of 1999 were utilized for this data analysis. The largest sample (n=980) was the incoming sample of Class of 1999 cadets representing the entry administration of the DIT in July 1995. The follow-up sample (n=273) represents the second administration of the DIT in January 1999--completing a 3.5 year longitudinal study. The matched-pair sample (n=201) represents the Class of 1999 subjects that had usable entry and follow-up DIT scores. All of the DIT scores utilized for the three reported samples successfully passed the DIT consistency check.

Demographics and Descriptive Statistics for the Entry Sample

The Class of 1999 entered USAFA in June 1995 with an incoming strength of 1,340 cadets. The USAFA Office of Institutional Research administered the DIT to 1,299 Class of 1999 cadets in July 1995 utilizing subject social security number for identification purposes. Scoring of the entry DIT responses by the University of Minnesota revealed that 319 entry DIT scores should be purged from the sample for elevated M-score or failure of the consistency check. Demographic information on the usable entry sample (n=980) was obtained through USAFA databases maintained by the Academy Office of Institutional Research. Entry sample demographic data representing the variables utilized for statistical analysis is reported in Table 5. Descriptive statistics relevant to the entry sample are reported in Table 6.

Table 5: Demographics of the Entry DIT Sample (n=980)

| Variable | n | % |
|-------------------------------------|-----|------|
| Gender | | |
| Male | 822 | 83.9 |
| Female | 158 | 16.1 |
| Sibling Graduated USAFA | | |
| Yes | 56 | 5.7 |
| No | 924 | 94.3 |
| Parent Graduate of Military Academy | | |
| Yes | 45 | 4.6 |
| No | 935 | 95.4 |
| Entrance Waiver | | |
| Yes | 157 | 16.0 |
| No | 823 | 84.0 |
| Attrition from USAFA by 1999 | | |
| Yes | 282 | 28.8 |
| No | 698 | 71.2 |
| Prior Military Service Status | | |
| Yes | 106 | 10.8 |
| No | 874 | 89.2 |
| Attended Preparatory School | | |
| Yes | 144 | 14.7 |
| No | 836 | 85.3 |
| Persist/Attrition Code | | |
| 0-Remained | 698 | 71.2 |
| 1-Honor Violation | 32 | 3.3 |
| 6-Turnback to Later Class | 15 | 1.5 |
| 7-Church Mission | 19 | 1.9 |
| 8-Changed Mind/Self-Initiated | 93 | 9.5 |
| 11-Conduct/Military Deficiency | 71 | 7.2 |
| 14-Medical/Physical | 17 | 1.7 |
| 15-Academic | 35 | 3.6 |

Table 5 (continued)

| Variable | n | % |
|--|-----|------|
| Region at Entry into USAFA | | |
| 1- CT, DE, DC, MA, MD, ME, NH, NJ, NY, PA, RI, VA, VT, WV | 164 | 16.7 |
| 2- AL, AR, FL, GA, KY, LA, MS, NC, SC, TN | 179 | 18.3 |
| 3- IA, IL, IN, OH, MI, MN, MT, NE, ND, SD, WI, WY | 195 | 19.9 |
| 4- CO, KS, MO, NM, OK, TX | 283 | 28.9 |
| 5- AK, AZ, CA, HI, ID, NV, OR, UT, WA | 154 | 15.7 |
| 9- International | 5 | 0.5 |
| Entry Age (In Years) | | |
| 17 | 159 | 16.2 |
| 18 | 637 | 65.0 |
| 19 | 146 | 14.9 |
| 20 | 22 | 2.2 |
| 21 | 14 | 1.4 |
| 22 | 2 | 0.2 |

Table 6: Descriptive Statistics for Entry Sample (n=980)

Number of valid observations (listwise) = 980.00

| Variable | Mean | Std Dev | Minimum | Maximum | n |
|----------|-------|---------|---------|---------|-----|
| ENTRYAGE | 18.08 | .75 | 17.00 | 22.00 | 980 |
| PSCORE | 28.59 | 12.46 | 0.00 | 63.30 | 980 |
| N2 | 35.42 | 8.27 | 5.39 | 62.33 | 980 |

Demographics and Descriptive Statistics for the Follow-up Sample

The Class of 1999 entered USAFA in June 1995 with an incoming

strength of 1,340 cadets. By 31 December 1998, the USAFA Class of 1999 had a reduced strength of 966 cadets--376 cadets departed for various voluntary and non-voluntary reasons. This researcher readministered the DIT to a follow-up sample of Class of 1999 cadets (n=327) in January 1999. Each subject participating in the follow-up study provided his/her social security number for identification purposes. Scoring of the follow-up DIT responses by the University of Minnesota revealed that 54 follow-up DIT scores should be purged from the sample for elevated M-score or failure of the consistency check. Demographic information on the usable follow-up sample (n=273) was obtained through USAFA databases maintained by the Academy Office of Institutional Research. Follow-up sample demographic data representing the variables utilized for statistical analysis is reported in Table 7. Descriptive statistics relevant to the follow-up sample are reported in Table 8.

Table 7: Demographics of the Follow-up DIT Sample (n=273)

| Variable | n | % |
|-------------------------|-----|------|
| Gender | | |
| Male | 240 | 87.9 |
| Female | 29 | 10.6 |
| Unknown | 4 | 1.5 |
| Sibling Graduated USAFA | | |
| Yes | 15 | 5.5 |
| No | 254 | 93.0 |
| Unknown | 4 | 1.5 |

Table 7 (continued)

| Variable | n | % |
|--|-----|------|
| Parent Graduate of Military Academy | | |
| Yes | 14 | 5.1 |
| No | 255 | 93.4 |
| Unknown | 4 | 1.5 |
| Entrance Waiver | | |
| Yes | 36 | 13.2 |
| No | 233 | 85.3 |
| Unknown | 4 | 1.5 |
| Prior Military Service Status | | |
| Yes | 30 | 11.0 |
| No | 243 | 89.0 |
| Attended Preparatory School | | |
| Yes | 41 | 15.0 |
| No | 232 | 85.0 |
| Leadership Position | | |
| Yes | 12 | 4.4 |
| No | 261 | 95.6 |
| Region at Entry into USAFA | | |
| 1- CT, DE, DC, MA, MD, ME, NH, NJ, NY, PA, RI, VA, VT, WV | 41 | 15.0 |
| 2- AL, AR, FL, GA, KY, LA, MS, NC, SC, TN | 44 | 16.1 |
| 3- IA, IL, IN, OH, MI, MN, MT, NE, ND, SD, WI, WY | 53 | 19.4 |
| 4- CO, KS, MO, NM, OK, TX | 78 | 28.6 |
| 5- AK, AZ, CA, HI, ID, NV, OR, UT, WA | 51 | 18.7 |
| 9- International | 1 | 0.4 |
| Unknown | 5 | 1.8 |

Table 7 (continued)

| Variable | n | % |
|----------------------------|-----|------|
| Follow-up Age (In Years) | | |
| 20 | 3 | 1.1 |
| 21 | 139 | 50.9 |
| 22 | 99 | 36.3 |
| 23 | 17 | 6.2 |
| 24 | 7 | 2.6 |
| 25 | 2 | 0.7 |
| Unknown | 6 | 2.2 |
| Cum Grade Point Average | | |
| 3.50-4.00 | 37 | 13.6 |
| 3.00-3.49 | 77 | 28.2 |
| 2.50-2.99 | 106 | 38.8 |
| 2.00-2.49 | 49 | 17.9 |
| 0.00-1.99 | 0 | 0.0 |
| Unknown | 4 | 1.5 |
| Cum Military Point Average | | |
| 3.50-4.00 | 11 | 4.0 |
| 3.00-3.49 | 43 | 15.8 |
| 2.50-2.99 | 186 | 68.1 |
| 2.00-2.49 | 29 | 10.6 |
| 0.00-1.99 | 0 | 0.0 |
| Unknown | 4 | 1.5 |

Table 8: Descriptive Statistics for Follow-up Sample (n=273)

Number of valid observations (listwise) = 267.00

| Variable | Mean | Std Dev | Minimum | Maximum | n |
|----------|-------|---------|---------|---------|-----|
| MPACUM | 2.79 | 0.30 | 2.18 | 3.88 | 269 |
| GPACUM | 2.93 | 0.46 | 2.04 | 3.96 | 269 |
| AGEEXIT | 21.60 | 0.80 | 20.00 | 25.00 | 267 |
| PSCORE | 39.05 | 15.76 | 0.00 | 76.70 | 273 |
| N2 | 42.26 | 10.92 | 14.59 | 67.45 | 273 |

Descriptive Statistics for the Matched-Pairs Sample

Utilizing the entry and follow-up samples along with the corresponding subject social security numbers, the researcher was able to match 201 cases of entry and follow-up DIT scores. Scoring of the entry and follow-up DIT responses by the University of Minnesota revealed that 126 subjects from the 327 subject follow-up study could not be adequately matched. Of the 327 subjects participating in the follow-up study, 54 had invalid follow-up DIT scores due to elevated M-score or failure of the consistency check. Of the 327 subjects participating in the follow-up study, 72 had invalid entry DIT scores due to elevated M-score or failure of the consistency check. Descriptive statistics relevant to the matched-pairs sample of 201 subjects are reported in Table 9.

Table 9: Descriptive Statistics for Entry/Follow-up Paired Sample (n=201)

Number of valid observations (listwise) = 201.00

| Variable | Mean | Std Dev | Minimum | Maximum | n |
|----------------------------|-------|---------|---------|---------|-----|
| Stage 2 Score at Entry | 1.73 | 2.69 | 0.00 | 8.00 | 200 |
| Stage 2 Score at Follow-up | 2.38 | 3.47 | 0.00 | 14.00 | 201 |
| Change in Stage 2 Score | 0.65 | 4.20 | -8.00 | 14.00 | 200 |
| Stage 3 Score at Entry | 15.32 | 7.12 | 0.00 | 32.00 | 200 |
| Stage 3 Score at Follow-up | 11.14 | 7.00 | 0.00 | 32.00 | 201 |
| Change in Stage 3 Score | -4.20 | 8.80 | -26.00 | 16.00 | 200 |
| Stage 4 Score at Entry | 21.51 | 7.25 | 2.00 | 40.70 | 200 |
| Stage 4 Score at Follow-up | 19.67 | 9.00 | 0.00 | 50.00 | 201 |
| Change in Stage 4 Score | -1.74 | 10.77 | -24.70 | 32.00 | 200 |

Table 9 (continued)

| Variable | Mean | Std Dev | Minimum | Maximum | n |
|-----------------------------|-------|---------|---------|---------|-----|
| Stage 5A Score at Entry | 12.27 | 6.49 | 0.00 | 34.00 | 200 |
| Stage 5A Score at Follow-up | 18.42 | 8.20 | 0.00 | 40.00 | 201 |
| Change in Stage 5A Score | 6.10 | 10.08 | -22.00 | 30.00 | 200 |
| Stage 5B Score at Entry | 0.84 | 2.08 | 0.00 | 8.90 | 200 |
| Stage 5B Score at Follow-up | 1.92 | 2.65 | 0.00 | 8.00 | 201 |
| Change in 5B Score | 1.06 | 3.44 | -8.00 | 8.00 | 200 |
| Stage 6 Score at Entry | 3.91 | 3.71 | 0.00 | 16.00 | 200 |
| Stage 6 Score at Follow-up | 3.09 | 3.57 | 0.00 | 14.00 | 201 |
| Change in Stage 6 Score | -0.80 | 4.51 | -12.00 | 12.00 | 200 |
| P-score at Entry | 28.27 | 12.48 | 0.00 | 63.30 | 201 |
| P-score at Follow-up | 39.05 | 15.81 | 0.00 | 76.70 | 201 |
| Change in P-score | 10.78 | 19.72 | -40.00 | 56.70 | 201 |
| N2-score at Entry | 35.28 | 8.93 | 14.38 | 62.33 | 201 |
| N2-score at Follow-up | 42.38 | 10.98 | 14.59 | 67.45 | 201 |
| Change in N2-score | 7.10 | 12.82 | -23.25 | 32.68 | 201 |

Statistical Analyses Results for Hypotheses 1 through 12

The remaining twelve parts of this quantitative section present the statistical analyses relevant to the hypotheses for research questions 1 through 12. Each part restates the relevant research hypothesis, then outlines the statistical analysis conducted to determine the statistical significance of the research.

Hypothesis 1

There are no longitudinal changes in cadet moral judgment scores from entry into USAFA to completion of the 4th year (Class of 1999 cohort) of Academy education (DIT P-score, N2-score, or stage scores).

Utilizing matched-pairs of entry and follow-up DIT scores for 201 subjects, the researcher conducted paired-samples t-tests analyzing longitudinal change in P-score, N2-score, and stage scores. Previously in this chapter, Table 9 presented the descriptive statistics relevant to the matched P-scores, N2-scores, and stage scores. Tables 10 through 17 present the statistical analyses for the paired t-tests on P-score, N2-score, Stage 2 score, Stage 3 score, Stage 4 score, Stage 5A score, Stage 5B score, and Stage 6 score.

The strength of the Academy experience effect can be assessed by calculating the effect size (d) utilized by Pascarella and Terenzini (1991) in their analyses of college effects. Steven McNeel suggested that effect size could be utilized to compare findings with the works of other researchers (Rest and Narvaez, 1994, p. 31). Effect size for longitudinal studies was calculated by dividing freshman-to-senior change by freshman standard deviation. According to McNeel (Rest and Narvaez, 1994, p. 31), the proposed rules-of-thumb for interpreting effect sizes was small (.10 to .39), moderate (.40 to .69), large (.70 to .99), and very large (1.00 and above).

Table 10: Paired T-test of DIT P-Score

| Variable | Number of pairs | 2-tail Corr Sig | Mean | SD | SE of Mean |
|----------|--------------------|--------------------|---------|--------|------------|
| P-out | 201 | .043 .543 | 39.0522 | 15.810 | 1.115 |
| P-in | | | 28.2748 | 12.482 | .880 |

| Paired Differences | | | t-value | df | 2-tail Sig |
|------------------------|--------|------------|---------|-----|------------|
| Mean | SD | SE of Mean | | | |
| 10.7775 | 19.716 | 1.391 | 7.75 | 200 | .000 |
| 95% CI (8.035, 13.520) | | | | | |

The paired P-score t-test indicated the null hypothesis $H_1-H_0=0$ could be rejected at the .05 level. The average difference between the follow-up and entry DIT P-scores was 10.78 and standard deviation of the difference was 19.72 ($t=7.75$, $df=200$, $p<.0001$). The 95% confidence interval for the average difference was between 8.04 and 13.52. Since the confidence interval does not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. The increase in P-score for the matched-pairs sample signaled an increase in cadet principled moral reasoning during attendance at the Academy. The effect size (d) for this analysis was large at 0.863.

Table 11: Paired T-test of DIT N2-Score

| Variable | Number of pairs | 2-tail Corr Sig | Mean | SD | SE of Mean |
|----------|--------------------|--------------------|---------|--------|------------|
| N2-out | 201 | .182 .010 | 42.3829 | 10.975 | .774 |
| N2-in | | | 35.2813 | 8.927 | .630 |

| Paired Differences | | | t-value | df | 2-tail Sig |
|-----------------------|--------|------------|---------|-----|------------|
| Mean | SD | SE of Mean | | | |
| 7.1016 | 12.822 | .904 | 7.85 | 200 | .000 |
| 95% CI (5.318, 8.885) | | | | | |

The paired N2-score t-test indicated the null hypothesis $H_1-H_0=0$ could be rejected at the .05 level. The average difference between the follow-up and entry DIT N2 scores was 7.10 and the standard deviation of the difference was 12.82 ($t=7.85$, $df=200$, $p<.0001$). The 95% confidence interval for the average difference was between 5.32 and 8.89. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. The increase in N2-score for the matched-pairs sample signaled an increase in cadet principled moral reasoning during attendance at the Academy. The effect size (d) for this analysis was large at 0.795.

Table 12: Paired T-test of DIT Stage 2 Score

| Variable | Number of pairs | 2-tail Corr Sig | Mean | SD | SE of Mean |
|------------|--------------------|--------------------|--------|-------|------------|
| Stage2-out | 200 | .092 .193 | 2.3800 | 3.481 | .246 |
| Stage2-in | | | 1.7310 | 2.688 | .190 |

| Paired Differences | | | t-value | df | 2-tail Sig |
|----------------------|-------|------------|---------|-----|------------|
| Mean | SD | SE of Mean | | | |
| .6490 | 4.197 | .297 | 2.19 | 199 | .030 |
| 95% CI (.064, 1.234) | | | | | |

The paired Stage 2 score t-test indicated the null hypothesis $H_1-H_0=0$ could be rejected at the .05 level. The average difference between the follow-up and entry DIT Stage 2 scores was .649 and the standard deviation of the difference was 4.197 ($t=2.19$, $df=199$, $p<.03$). The 95% confidence interval for the average difference was between .064 and 1.234. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. The analysis signaled an increase in Stage 2 score during attendance at the Academy for the matched-pairs sample. The effect size (d) for this analysis was small at 0.24.

Table 13: Paired T-test of DIT Stage 3 Score

| Variable | Number of pairs | 2-tail Corr | 2-tail Sig | Mean | SD | SE of Mean |
|------------|-----------------|-------------|------------|---------|-------|------------|
| Stage3-out | 200 | .225 | .001 | 11.1200 | 7.011 | .496 |
| Stage3-in | | | | 15.3220 | 7.123 | .504 |

| Paired Differences | | | t-value | df | 2-tail Sig |
|-------------------------|-------|------------|---------|-----|------------|
| Mean | SD | SE of Mean | | | |
| -4.2020 | 8.796 | .622 | -6.76 | 199 | .000 |
| 95% CI (-5.429, -2.975) | | | | | |

The paired Stage 3 score t-test indicated the null hypothesis $H_1-H_0=0$ could be rejected at the .05 level. The average difference between the follow-up and entry DIT Stage 3 scores was -4.20 and the standard deviation of the difference was 8.796 ($t=-6.76$, $df=199$, $p<.0001$). The 95% confidence interval for the average difference was between -5.429 and -2.975. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. The analysis signaled a decrease in Stage 3 score during attendance at the Academy for the matched-pairs sample. The effect size (d) for this analysis was moderate at 0.59.

Table 14: Paired T-test of DIT Stage 4 Score

| Variable | Number of pairs | 2-tail Corr | 2-tail Sig | Mean | SD | SE of Mean |
|------------|--------------------|----------------|---------------|---------|-------|------------|
| Stage4-out | 200 | .124 | .081 | 19.7700 | 8.918 | .631 |
| Stage4-in | | | | 21.5115 | 7.249 | .513 |

| Paired Differences | | | t-value | df | 2-tail Sig |
|------------------------|--------|------------|---------|-----|------------|
| Mean | SD | SE of Mean | | | |
| -1.7415 | 10.774 | .762 | -2.29 | 199 | .023 |
| 95% CI (-3.244, -.239) | | | | | |

The paired Stage 4 score t-test indicated the null hypothesis $H_1-H_0=0$ could be rejected at the .05 level. The average difference between the follow-up and entry DIT Stage 4 scores was -1.74 and the standard deviation of the difference was 10.774 ($t=-2.29$, $df=199$, $p<.023$). The 95% confidence interval for the average difference was between -3.244 and -.239. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. The analysis signaled a decrease in Stage 4 score during attendance at the Academy for the matched-pairs sample. The effect size (d) for this analysis was small at 0.24.

Table 15: Paired T-test of DIT Stage 5A Score

| Variable | Number of pairs | 2-tail Corr | Sig | Mean | SD | SE of Mean |
|-------------|--------------------|----------------|------|---------|-------|------------|
| Stage5A-out | 200 | .071 | .317 | 18.3700 | 8.194 | .579 |
| Stage5A-in | | | | 12.2695 | 6.486 | .459 |

| Paired Differences | | | t-value | df | 2-tail Sig |
|-----------------------|--------|------------|---------|-----|------------|
| Mean | SD | SE of Mean | | | |
| 6.1005 | 10.082 | .713 | 8.56 | 199 | .000 |
| 95% CI (4.695, 7.506) | | | | | |

The paired Stage 5A score t-test indicated the null hypothesis $H_1-H_0=0$ could be rejected at the .05 level. The average difference between the follow-up and entry DIT Stage 5A scores was 6.10 and the standard deviation of the difference was 10.082 ($t=8.56$, $df=199$, $p<.0001$). The 95% confidence interval for the average difference was between 4.695 and 7.506. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. The analysis signaled an increase in Stage 5A score during attendance at the Academy for the matched-pairs sample. The effect size (d) for this analysis was large at 0.94.

Table 16: Paired T-test of DIT Stage 5B Score

| Variable | Number of pairs | 2-tail Corr | Sig | Mean | SD | SE of Mean |
|-------------|--------------------|----------------|------|--------|-------|------------|
| Stage5B-out | 200 | -.049 | .494 | 1.9000 | 2.643 | .187 |
| Stage5B-in | | | | .8445 | 2.084 | .147 |

| Paired Differences | | | t-value | df | 2-tail Sig |
|----------------------|-------|------------|---------|-----|------------|
| Mean | SD | SE of Mean | | | |
| 1.0555 | 3.445 | .244 | 4.33 | 199 | .000 |
| 95% CI (.575, 1.536) | | | | | |

The paired Stage 5B score t-test indicated the null hypothesis $H_1-H_0=0$ could be rejected at the .05 level. The average difference between the follow-up and entry DIT Stage 5B scores was 1.06 and the standard deviation of the difference was 3.445 ($t=4.33$, $df=199$, $p<.0001$). The 95% confidence interval for the average difference was between .575 and 1.536. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. The analysis signaled an increase in Stage 5B score during attendance at the Academy for the matched-pairs sample. The effect size (d) for this analysis was moderate at 0.51.

Table 17: Paired T-test of DIT Stage 6 Score

| Variable | Number of pairs | 2-tail Corr | Sig | Mean | SD | SE of Mean |
|------------|--------------------|----------------|------|--------|-------|------------|
| Stage6-out | 200 | .231 | .001 | 3.1100 | 3.568 | .252 |
| Stage6-in | | | | 3.9060 | 3.706 | .262 |

| Paired Differences | | | | | | |
|------------------------|-------|------------|---------|-----|------------|--|
| Mean | SD | SE of Mean | t-value | df | 2-tail Sig | |
| -.7960 | 4.513 | .319 | -2.49 | 199 | .013 | |
| 95% CI (-1.425, -.167) | | | | | | |

The paired Stage 6 score t-test indicated the null hypothesis $H_1-H_0=0$ could be rejected at the .05 level. The average difference between the follow-up and entry DIT Stage 6 scores was -.796 and the standard deviation of the difference was 4.513 ($t=-2.49$, $df=199$, $p<.013$). The 95% confidence interval for the average difference was between -1.425 and -.167. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. The analysis signaled a decrease in Stage 6 score during attendance at the Academy for the matched-pairs sample. The effect size (d) for this analysis was small at 0.21.

Hypothesis 2

There are no group differences in moral judgment at entry (entry DIT P-scores and N2-scores) with relation to completion/non-completion of Academy education (Class of 1999). This hypothesis delineates groupings by completion and attrition status further delineating attrition status by attrition reason with relationship to Honor Violation (lying, cheating, stealing, tolerating), Conduct, Academic, Athletic or Self-Initiated Elimination (SIE) dismissals.

Independent samples t-tests and ANOVA analyses of entry P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry DIT scores (P and N2) for the group of cadets that remained at the Academy through the spring 1999 semester and those cadets that departed the Academy prior to the spring 1999 semester. The ANOVA analyses attempted to more finely differentiate group differences in entry DIT P-scores and N2-scores by attrition code. Instead of the dichotomous analysis that the t-test offered, the ANOVA analysis enabled the researcher to investigate differences between the group of cadets remaining at USAFA through the spring 1999 semester and seven distinct attrition groupings of cadets that departed USAFA. The seven attrition code distinctions were outlined in Table 5 earlier in this chapter.

A near-census of Class of 1999 cadets was conducted using the DIT during the summer of 1995 (1,299 of 1,340 cadets completed the DIT). Once the entry DITs were scored, a usable sample size of 980 subjects passed the

consistency and M-score checks. Tables 18 and 19 display the independent samples t-test results of entry P-scores and N2-scores for attrition and persistence. Tables 20 and 21 present the ANOVA results of entry P-scores and N2-scores for the group of cadets that persisted and the seven groupings of cadets that left USAFA.

Table 18: Independent Samples T-test of Entry DIT P-score for Attrition

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------------|--------------------|---------|--------|------------|
| P-Score | | | | |
| Departed | 282 | 27.9067 | 12.043 | .717 |
| Remained | 698 | 28.8713 | 12.616 | .478 |

Mean Difference = -.9646

Levene's Test for Equality of Variances: $F = 1.140$ $P = .286$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | -1.10 | 978 | .273 | .879 | (-2.689, .760) |
| Unequal | -1.12 | 542.41 | .263 | .862 | (-2.657, .728) |

Analysis of entry DIT group means for P-score by attrition/persistence status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could not be rejected at the .05 level. The entry sample average difference between the persistence group ($n=698$) and attrition group ($n=282$) for DIT P-scores was -.9646 ($t=-1.10$,

df=978, p=.273) . Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected (F=1.14, P=.286). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry P-score between cadets remaining at USAFA and cadets departing was between -2.689 and .760. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher persistence group entry mean on P-score than the attrition group.

Table 19: Independent Samples T-test of Entry DIT N2-score for Attrition

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------|--------------------|---------|-------|------------|
| N2-Score | | | | |
| Departed | 282 | 34.7964 | 8.373 | .499 |
| Remained | 698 | 35.6699 | 8.218 | .311 |

Mean Difference = -.8734

Levene's Test for Equality of Variances: F= .049 P= .825

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | -1.50 | 978 | .134 | .583 | (-2.018, .271) |
| Unequal | -1.49 | 511.05 | .138 | .588 | (-2.028, .281) |

Analysis of entry DIT group means for N2-score by attrition/persistence status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The entry sample average difference between the persistence group ($n=698$) and attrition group ($n=282$) for DIT N2-scores was $-.8734$ ($t=-1.50$, $df=978$, $p=.134$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.049$, $P=.825$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry N2-score between cadets remaining at USAFA and departing cadets was between -2.018 and $.271$. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher persistence group entry mean on N2-score than the attrition group.

Table 20: ANOVA of Entry DIT P-score by Attrition Code

Variable P-SCORE
By Variable ATTRITION

One-way Analysis of Variance

| Source | D.F. | Sum of Squares | Mean Squares | F Ratio | F Prob. |
|----------------|------|----------------|--------------|---------|---------|
| Between Groups | 7 | 1495.35 | 213.6212 | 1.3808 | .2098 |
| Within Groups | 972 | 150376.66 | 154.7085 | | |
| Total | 979 | 151872.01 | | | |

Table 20 (continued)

| Group | Count | Standard Mean | Standard Deviation | Error | 95 Pct Conf Int for Mean | | |
|-------|-------|---------------|--------------------|--------|--------------------------|----|---------|
| Grp 0 | 698 | 28.8713 | 12.6157 | .4775 | 27.9338 | TO | 29.8089 |
| Grp 1 | 32 | 29.2719 | 12.2662 | 2.1684 | 24.8494 | TO | 33.6943 |
| Grp 6 | 15 | 27.9067 | 13.7549 | 3.5515 | 20.2894 | TO | 35.5239 |
| Grp 7 | 19 | 21.0579 | 9.4237 | 2.1620 | 16.5158 | TO | 25.6000 |
| Grp 8 | 93 | 27.4398 | 11.5692 | 1.1997 | 25.0571 | TO | 29.8224 |
| Grp11 | 71 | 27.8746 | 12.2375 | 1.4523 | 24.9781 | TO | 30.7712 |
| Grp14 | 17 | 30.2118 | 14.2810 | 3.4636 | 22.8692 | TO | 37.5544 |
| Grp15 | 35 | 30.5629 | 11.4715 | 1.9390 | 26.6222 | TO | 34.5035 |
| Total | 980 | 28.5938 | 12.4551 | .3979 | 27.8130 | TO | 29.3745 |

| GROUP | MINIMUM | MAXIMUM |
|-------|---------|---------|
| Grp 0 | .0000 | 63.3000 |
| Grp 1 | 6.7000 | 60.7000 |
| Grp 6 | 3.3000 | 50.0000 |
| Grp 7 | 6.7000 | 40.0000 |
| Grp 8 | .0000 | 60.0000 |
| Grp11 | 6.7000 | 60.0000 |
| Grp14 | 3.3000 | 50.0000 |
| Grp15 | 6.7000 | 56.7000 |
| TOTAL | .0000 | 63.3000 |

The ANOVA indicated that the null hypothesis that all persistence/attrition group means were equal in the population could not be rejected at the .05 level ($F=1.38$, $\text{sig}=.21$). Sampling error could not be ruled out as a possible link to the observed differences in group means. While some grouping variables indicated observed differences in P-scores, none of the analyses indicated statistically significant results.

Table 21: ANOVA of Entry DIT N2-score by Attrition Code

Variable N2-SCORE
By Variable ATTRITION

One-way Analysis of Variance

| Source | D.F. | Sum of Squares | Mean Squares | F Ratio | F Prob. |
|----------------|------|----------------|--------------|---------|---------|
| Between Groups | 7 | 805.742 | 115.1060 | 1.6921 | .1072 |
| Within Groups | 972 | 66120.625 | 68.0253 | | |
| Total | 979 | 66926.367 | | | |

| Group | Count | Standard Mean | Standard Deviation | Error | 95 Pct Conf Int for Mean | | |
|-------|-------|---------------|--------------------|--------|--------------------------|----|---------|
| Grp 0 | 698 | 35.6699 | 8.2179 | .3111 | 35.0591 | TO | 36.2806 |
| Grp 1 | 32 | 35.6612 | 8.7443 | 1.5458 | 32.5085 | TO | 38.8138 |
| Grp 6 | 15 | 36.1545 | 9.0688 | 2.3416 | 31.1323 | TO | 41.1766 |
| Grp 7 | 19 | 29.8727 | 7.5408 | 1.7300 | 26.2381 | TO | 33.5072 |
| Grp 8 | 93 | 34.2321 | 7.9907 | .8286 | 32.5864 | TO | 35.8777 |
| Grp11 | 71 | 35.2685 | 8.1682 | .9694 | 33.3351 | TO | 37.2019 |
| Grp14 | 17 | 35.2682 | 10.1886 | 2.4711 | 30.0297 | TO | 40.5067 |
| Grp15 | 35 | 36.4095 | 8.2226 | 1.3899 | 33.5850 | TO | 39.2341 |
| Total | 980 | 35.4185 | 8.2681 | .2641 | 34.9002 | TO | 35.9368 |

| GROUP | MINIMUM | MAXIMUM |
|-------|---------|---------|
| Grp 0 | 12.6767 | 62.3322 |
| Grp 1 | 14.6672 | 53.9919 |
| Grp 6 | 18.9753 | 46.5742 |
| Grp 7 | 15.8701 | 44.4717 |
| Grp 8 | 5.3940 | 52.9345 |
| Grp11 | 18.4848 | 58.1826 |
| Grp14 | 21.1758 | 49.9942 |
| Grp15 | 19.3592 | 53.3599 |
| TOTAL | 5.3940 | 62.3322 |

The ANOVA indicated that the null hypothesis that all persistence/attrition group means were equal in the population could not be rejected at the .05 level ($F=1.69$, $\text{sig}=.11$). Sampling error could not be ruled out as a possible link to the observed differences in group means. While some grouping variables indicated observed differences in N2-scores, none of the analyses indicated statistically significant results.

Hypothesis 3

There will be no age group differences in moral judgment (DIT score) for Class of 1999 cadets at entry or during their senior class year.

ANOVA analyses of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The ANOVA analyses attempted to differentiate group differences in entry and follow-up DIT P-scores and N2-scores by age at DIT administration. The ANOVA analysis enabled the researcher to investigate whether differences existed between the different age groupings of cadets. Six entry age group distinctions were outlined in Table 5 earlier in this chapter (cadets at entry ranged from 17 to 22 years old). Six follow-up age group distinctions were outlined in Table 7 earlier in this chapter (cadets at follow-up ranged from 20 to 25 years old). Tables 22 and 23 display the ANOVA results of entry P-scores and N2-scores by entry age. Tables 24 and 25 present the ANOVA results of follow-up P-scores and N2-scores by follow-up age.

Table 22: ANOVA of Entry DIT P-score by Entry Age

Variable P-SCORE
By Variable ENTRYAGE

One-way Analysis of Variance

| Source | D.F. | Sum of Squares | Mean Squares | F Ratio | F Prob. |
|----------------|------|----------------|--------------|---------|---------|
| Between Groups | 5 | 721.6232 | 144.3246 | .9300 | .4606 |
| Within Groups | 974 | 151150.3888 | 155.1852 | | |
| Total | 979 | 151872.0120 | | | |

| Group | Count | Standard Mean | Standard Deviation | Error | 95 Pct Conf Int for Mean |
|-------|-------|---------------|--------------------|---------|--------------------------|
| Grp17 | 159 | 29.0836 | 12.4938 | .9908 | 27.1267 TO 31.0406 |
| Grp18 | 637 | 28.9035 | 12.6534 | .5013 | 27.9190 TO 29.8879 |
| Grp19 | 146 | 26.7767 | 11.7310 | .9709 | 24.8578 TO 28.6956 |
| Grp20 | 22 | 28.8455 | 10.8512 | 2.3135 | 24.0343 TO 33.6566 |
| Grp21 | 14 | 26.5786 | 10.9596 | 2.9291 | 20.2507 TO 32.9064 |
| Grp22 | 2 | 35.0000 | 25.8801 | 18.3000 | -197.5235 TO 267.5235 |
| Total | 980 | 28.5938 | 12.4551 | .3979 | 27.8130 TO 29.3745 |

| GROUP | MINIMUM | MAXIMUM |
|-------|---------|---------|
| Grp17 | 3.3000 | 60.0000 |
| Grp18 | .0000 | 63.3000 |
| Grp19 | .0000 | 60.0000 |
| Grp20 | 6.7000 | 46.7000 |
| Grp21 | .0000 | 44.4000 |
| Grp22 | 16.7000 | 53.3000 |
| TOTAL | .0000 | 63.3000 |

The ANOVA indicated that the null hypothesis that all entry age group P-score means were equal in the population could not be rejected at the .05 level ($F=.93$, $\text{sig}=.46$). Sampling error could not be ruled out as a possible link to the observed differences in age group means. While some grouping variables indicated observed differences in P-scores, none of the analyses indicated statistically significant results.

Table 23: ANOVA of Entry DIT N2-score by Entry Age

Variable N2-SCORE
By Variable ENTRYAGE

One-way Analysis of Variance

| Source | D.F. | Sum of Squares | Mean Squares | F Ratio | F Prob. |
|----------------|------|----------------|--------------|---------|---------|
| Between Groups | 5 | 257.8179 | 51.5636 | .7533 | .5837 |
| Within Groups | 974 | 66668.5493 | 68.4482 | | |
| Total | 979 | 66926.3672 | | | |

| Group | Count | Standard Mean | Standard Deviation | Error | 95 Pct Conf Int for Mean |
|-------|-------|---------------|--------------------|---------|--------------------------|
| Grp17 | 159 | 35.7802 | 8.3837 | .6649 | 34.4670 TO 37.0934 |
| Grp18 | 637 | 35.5426 | 8.1834 | .3242 | 34.9059 TO 36.1793 |
| Grp19 | 146 | 34.3060 | 8.4884 | .7025 | 32.9175 TO 35.6945 |
| Grp20 | 22 | 36.6852 | 6.7298 | 1.4348 | 33.7013 TO 39.6690 |
| Grp21 | 14 | 34.9822 | 8.5865 | 2.2948 | 30.0245 TO 39.9399 |
| Grp22 | 2 | 37.4860 | 24.7875 | 17.5274 | -185.2211 TO 260.1932 |
| Total | 980 | 35.4185 | 8.2681 | .2641 | 34.9002 TO 35.9368 |

Table 23 (continued)

| GROUP | MINIMUM | MAXIMUM |
|-------|---------|---------|
| Grp17 | 16.8259 | 54.7761 |
| Grp18 | 14.3771 | 62.3322 |
| Grp19 | 5.3940 | 54.0004 |
| Grp20 | 19.4917 | 48.8015 |
| Grp21 | 18.2862 | 45.1390 |
| Grp22 | 19.9586 | 55.0135 |
| TOTAL | 5.3940 | 62.3322 |

The ANOVA indicated that the null hypothesis that all entry age group N2-score means were equal in the population could not be rejected at the .05 level ($F=.75$, $\text{sig}=.58$). Sampling error could not be ruled out as a possible link to the observed differences in age group means. While some grouping variables indicated observed differences in N2-scores, none of the analyses indicated statistically significant results.

Table 24: ANOVA of Follow-up DIT P-score by Follow-up Age

Variable P-SCORE
By Variable AGEEXIT

One-way Analysis of Variance

| Source | D.F. | Sum of Squares | Mean Squares | F Ratio | F Prob. |
|----------------|------|----------------|--------------|---------|---------|
| Between Groups | 5 | 1657.0060 | 331.4012 | 1.3429 | .2466 |
| Within Groups | 261 | 64410.0860 | 246.7819 | | |
| Total | 266 | 66067.0920 | | | |

Table 24 (continued)

| Group | Count | Standard Mean | Standard Deviation | Error | 95 Pct Conf Int for Mean | |
|-------|-------|---------------|--------------------|--------|--------------------------|---------|
| Grp20 | 3 | 58.9000 | 8.4042 | 4.8521 | 38.0227 TO | 79.7773 |
| Grp21 | 139 | 38.7165 | 15.5399 | 1.3181 | 36.1103 TO | 41.3228 |
| Grp22 | 99 | 37.4727 | 16.2745 | 1.6356 | 34.2268 TO | 40.7186 |
| Grp23 | 17 | 40.5882 | 15.8603 | 3.8467 | 32.4336 TO | 48.7429 |
| Grp24 | 7 | 43.8000 | 12.6640 | 4.7865 | 32.0878 TO | 55.5122 |
| Grp25 | 2 | 43.3000 | .0000 | .0000 | 43.3000 TO | 43.3000 |
| Total | 267 | 38.7689 | 15.7598 | .9645 | 36.8699 TO | 40.6679 |

| GROUP | MINIMUM | MAXIMUM |
|-------|---------|---------|
| Grp20 | 50.0000 | 66.7000 |
| Grp21 | .0000 | 70.0000 |
| Grp22 | .0000 | 76.7000 |
| Grp23 | 16.7000 | 70.0000 |
| Grp24 | 30.0000 | 63.3000 |
| Grp25 | 43.3000 | 43.3000 |
| TOTAL | .0000 | 76.7000 |

The ANOVA indicated that the null hypothesis that all follow-up age group P-score means were equal in the population could not be rejected at the .05 level ($F=1.3429$, $\text{sig}=.2466$). Sampling error could not be ruled out as a possible link to the observed differences in age group means. While some grouping variables indicated observed differences in P-scores, none of the analyses indicated statistically significant results.

Table 25: ANOVA of Follow-up DIT N2-score by Follow-up Age

Variable N2-SCORE
By Variable AGEEXIT

One-way Analysis of Variance

| Source | D.F. | Sum of Squares | Mean Squares | F Ratio | F Prob. |
|----------------|------|----------------|--------------|---------|---------|
| Between Groups | 5 | 1052.3388 | 210.4678 | 1.7812 | .1170 |
| Within Groups | 261 | 30840.0155 | 118.1610 | | |
| Total | 266 | 31892.3544 | | | |

| Group | Count | Standard Mean | Standard Deviation | Error | 95 Pct Conf Int for Mean |
|-------|-------|---------------|--------------------|--------|--------------------------|
| Grp20 | 3 | 55.0664 | 4.7959 | 2.7689 | 43.1524 TO 66.9803 |
| Grp21 | 139 | 42.7132 | 10.7764 | .9140 | 40.9058 TO 44.5205 |
| Grp22 | 99 | 40.3436 | 10.9982 | 1.1054 | 38.1500 TO 42.5371 |
| Grp23 | 17 | 42.4119 | 12.1415 | 2.9447 | 36.1693 TO 48.6544 |
| Grp24 | 7 | 46.4760 | 9.5886 | 3.6242 | 37.6080 TO 55.3439 |
| Grp25 | 2 | 47.3265 | 1.8917 | 1.3376 | 30.3306 TO 64.3224 |
| Total | 267 | 42.0874 | 10.9497 | .6701 | 40.7680 TO 43.4068 |

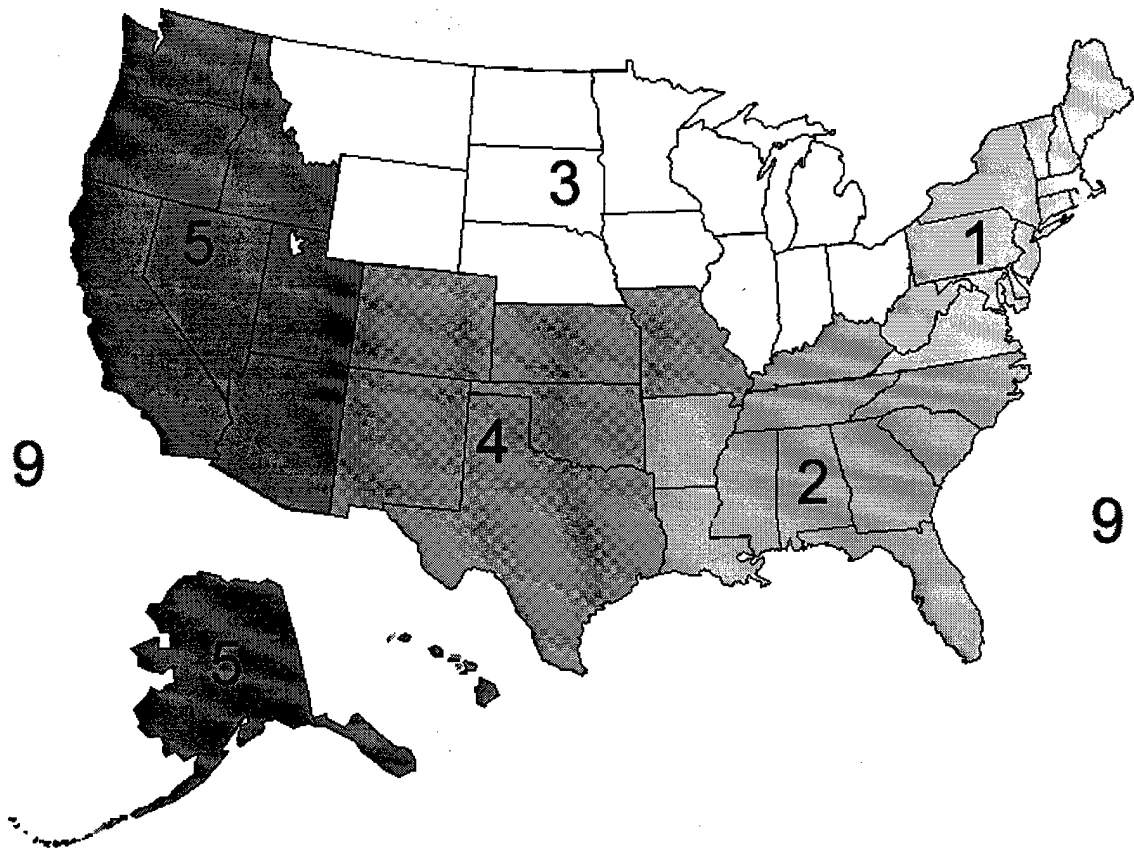
| GROUP | MINIMUM | MAXIMUM |
|-------|---------|---------|
| Grp20 | 50.8147 | 60.2652 |
| Grp21 | 16.1847 | 64.1746 |
| Grp22 | 14.5945 | 67.4460 |
| Grp23 | 24.3968 | 60.7113 |
| Grp24 | 31.3004 | 58.3295 |
| Grp25 | 45.9889 | 48.6641 |
| TOTAL | 14.5945 | 67.4460 |

The ANOVA indicated that the null hypothesis that all follow-up age group N2-score means were equal in the population could not be rejected at the .05 level ($F=1.7812$, $\text{sig}=.117$). Sampling error could not be ruled out as a possible link to the observed differences in age group means. While some grouping variables indicated observed differences in N2-scores, none of the analyses indicated statistically significant results.

Hypothesis 4

There will be no geographic group differences in cadet moral judgment (DIT score) at entry based on geographic region of cadet's parental domicile.

ANOVA analyses of entry P-scores and N2-scores were utilized to assess this hypothesis. The ANOVA analyses attempted to differentiate group differences in entry DIT P-scores and N2-scores by geographic region based on the home location from which each cadet arrived at the Academy. The ANOVA analysis enabled the researcher to investigate whether differences existed between geographic region groupings of cadets. Six geographic region group distinctions for entering cadets were utilized for this analysis (Figure 4). The regional distinctions presented in this research are utilized by USAFA to track admissions data. Five regions represented the United States and one region represented international students. Tables 26 and 27 display the ANOVA results of entry P-scores and N2-scores by geographic region.



Geographic Regions

- 1 - CT, DE, DC, MA, MD, ME, NH, NJ, NY, PA, RI, VA, VT, WV
- 2 - AL, AR, FL, GA, KY, LA, MS, NC, SC, TN
- 3 - IA, IL, IN, OH, MI, MN, MT, NE, ND, SD, WI, WY
- 4 - CO, KS, MO, NM, OK, TX
- 5 - AK, AZ, CA, HI, ID, NV, OR, UT, WA
- 9 - INTERNATIONAL

Figure 4: Geographic Region at Entry into USAFA

Table 26: ANOVA of Entry DIT P-score by Geographic Region

Variable P-SCORE
By Variable AREA

One-way Analysis of Variance

| Source | D.F. | Sum of Squares | Mean Squares | F Ratio | F Prob. |
|----------------|------|----------------|--------------|---------|---------|
| Between Groups | 5 | 1490.946 | 298.1892 | 1.9313 | .0866 |
| Within Groups | 974 | 150381.066 | 154.3953 | | |
| Total | 979 | 151872.012 | | | |

| Group | Count | Standard Mean | Standard Deviation | Error | 95 Pct Conf Int for Mean | | |
|-------|-------|---------------|--------------------|--------|--------------------------|----|---------|
| Grp 1 | 164 | 28.5274 | 12.1052 | .9453 | 26.6609 | TO | 30.3940 |
| Grp 2 | 179 | 27.8715 | 12.3144 | .9204 | 26.0552 | TO | 29.6878 |
| Grp 3 | 195 | 30.2933 | 12.9662 | .9285 | 28.4620 | TO | 32.1246 |
| Grp 4 | 283 | 27.4201 | 12.0266 | .7149 | 26.0129 | TO | 28.8274 |
| Grp 5 | 154 | 29.2247 | 12.9530 | 1.0438 | 27.1626 | TO | 31.2868 |
| Grp 9 | 5 | 37.3400 | 10.3597 | 4.6330 | 24.4770 | TO | 50.2030 |
| Total | 980 | 28.5938 | 12.4551 | .3979 | 27.8130 | TO | 29.3745 |

| GROUP | MINIMUM | MAXIMUM |
|-------|---------|---------|
| Grp 1 | .0000 | 56.7000 |
| Grp 2 | .0000 | 60.0000 |
| Grp 3 | .0000 | 63.3000 |
| Grp 4 | .0000 | 60.0000 |
| Grp 5 | 3.3000 | 60.0000 |
| Grp 9 | 26.7000 | 53.3000 |
| TOTAL | .0000 | 63.3000 |

The ANOVA indicated that the null hypothesis that all entry geographic region group P-score means were equal in the population could not be rejected at the .05 level ($F=1.93$, $\text{sig}=.08$). Sampling error could not be ruled out as a possible link to the observed differences in geographic region group means. While some grouping variables indicated observed differences in P-scores, none of the analyses indicated statistically significant results.

Table 27: ANOVA of Entry DIT N2-score by Geographic Region

Variable N2-SCORE
By Variable AREA

One-way Analysis of Variance

| Source | D.F. | Sum of Squares | Mean Squares | F Ratio | F Prob. |
|----------------|------|----------------|--------------|---------|---------|
| Between Groups | 5 | 662.9087 | 132.5817 | 1.9488 | .0839 |
| Within Groups | 974 | 66263.4585 | 68.0323 | | |
| Total | 979 | 66926.3672 | | | |

| Group | Count | Standard Mean | Standard Deviation | Error | 95 Pct Conf Int for Mean |
|-------|-------|---------------|--------------------|--------|--------------------------|
| Grp 1 | 164 | 35.4561 | 8.0308 | .6271 | 34.2178 TO 36.6944 |
| Grp 2 | 179 | 35.1265 | 8.0109 | .5988 | 33.9450 TO 36.3081 |
| Grp 3 | 195 | 36.4021 | 8.4481 | .6050 | 35.2089 TO 37.5953 |
| Grp 4 | 283 | 34.4868 | 8.2435 | .4900 | 33.5223 TO 35.4514 |
| Grp 5 | 154 | 36.0004 | 8.4872 | .6839 | 34.6493 TO 37.3516 |
| Grp 9 | 5 | 41.0928 | 8.6318 | 3.8603 | 30.3751 TO 51.8104 |
| Total | 980 | 35.4185 | 8.2681 | .2641 | 34.9002 TO 35.9368 |

Table 27 (continued)

| GROUP | MINIMUM | MAXIMUM |
|-------|---------|---------|
| Grp 1 | 5.3940 | 51.7261 |
| Grp 2 | 14.3771 | 58.1826 |
| Grp 3 | 14.6672 | 62.3322 |
| Grp 4 | 12.6767 | 55.6734 |
| Grp 5 | 15.8701 | 56.2136 |
| Grp 9 | 32.1880 | 55.0135 |
| TOTAL | 5.3940 | 62.3322 |

The ANOVA indicated that the null hypothesis that all entry geographic region group N2-score means were equal in the population could not be rejected at the .05 level ($F=1.95$, $\text{sig}=.08$). Sampling error could not be ruled out as a possible link to the observed differences in geographic region group means. While some grouping variables indicated observed differences in N2-scores, none of the analyses indicated statistically significant results.

Hypothesis 5

There will be no group differences in moral judgment (entry and follow-up DIT scores) between cadets who attended the USAFA Prep School and those that did not.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry and follow-up DIT scores (P and N2) for the group of cadets that attended prep

schools versus the group of cadets that did not attend prep school. Tables 28 and 29 display the independent samples t-test results of entry P-scores and N2-scores by prep school status. Tables 30 and 31 present the independent samples t-test results of follow-up P-scores and N2-scores by prep school status.

Table 28: Independent Samples T-test of Entry DIT P-score for Prep School Attendance Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------------|-----------------|---------|--------|------------|
| <hr/> | | | | |
| P-Score | | | | |
| No Prep School | 836 | 28.9150 | 12.439 | .430 |
| Prep School | 144 | 26.7292 | 12.429 | 1.036 |
| <hr/> | | | | |

Mean Difference = 2.1858

Levene's Test for Equality of Variances: $F = .072$ $P = .788$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | 1.95 | 978 | .052 | 1.122 | (-.016, 4.388) |
| Unequal | 1.95 | 195.60 | .053 | 1.122 | (-.026, 4.398) |
| <hr/> | | | | | |

Analysis of entry DIT group means for P-score by prep school attendance status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The entry sample average difference between the prep school group ($n=144$) and non-prep school group ($n=836$) for DIT P-scores was 2.1858 ($t=1.95$, $df=978$, $p=.052$). Looking at the Levene test for equality of variances,

the null hypothesis of equal variances could not be rejected ($F=.072$, $P=.788$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry P-score between cadets attending a prep school and cadets not attending prep school was between $-.016$ and 4.388 . Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher non-prep school group entry mean on P-score than the prep school group.

Table 29: Independent Samples T-test of Entry DIT P-score for Prep School Attendance Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------------|-----------------|---------|-------|------------|
| <hr/> | | | | |
| N2-Score | | | | |
| No Prep School | 836 | 35.6340 | 8.195 | .283 |
| Prep School | 144 | 34.1678 | 8.601 | .717 |
| <hr/> | | | | |

Mean Difference = 1.4661

Levene's Test for Equality of Variances: $F= 1.137$ $P= .286$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | 1.97 | 978 | .049 | .745 | (.004, 2.928) |
| Unequal | 1.90 | 190.43 | .059 | .771 | (-.054, 2.986) |
| <hr/> | | | | | |

Analysis of entry DIT group means for N2-score by prep school attendance status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could be rejected at the .05 level. The entry sample average difference between the prep school group ($n=144$) and none prep school group ($n=836$) for DIT N2-scores was 1.4661 ($t=1.97$, $df=978$, $p=.049$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=1.137$, $P=.286$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry N2-score between cadets attending a prep school and cadets not attending prep school was between .004 and 2.928. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was rejected. Sampling error could be rejected as a possible reason for the slightly higher non-prep school group entry mean on N2-score than the prep school group.

Table 30: Independent Samples T-test of Follow-up DIT P-score by Prep School Attendance Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------------|-----------------|---------|--------|------------|
| <hr/> | | | | |
| P-Score | | | | |
| No Prep School | 232 | 39.2690 | 15.938 | 1.046 |
| Prep School | 41 | 37.7976 | 14.857 | 2.320 |
| <hr/> | | | | |

Mean Difference = 1.4714

Table 30 (continued)

Levene's Test for Equality of Variances: $F= 1.644$ $P= .201$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | .55 | 271 | .583 | 2.674 | (-3.793, 6.736) |
| Unequal | .58 | 57.51 | .565 | 2.545 | (-3.624, 6.567) |

Analysis of follow-up DIT group means for P-score by prep school attendance status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The follow-up sample average difference between the prep school group ($n=41$) and non-prep school group ($n=232$) for DIT P-scores was 1.4714 ($t=.55$, $df=271$, $p=.583$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=1.644$, $P=.201$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up P-score between cadets attending a prep school and cadets not attending prep school was between -3.793 and 6.736. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher non-prep school group follow-up mean on P-score than the prep school group.

Table 31: Independent Samples T-test of Follow-up DIT N2-score by Prep School Attendance Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------------|-----------------|---------|--------|------------|
| <hr/> | | | | |
| N2-Score | | | | |
| No Prep School | 232 | 42.6631 | 10.819 | .710 |
| Prep School | 41 | 39.9556 | 11.329 | 1.769 |
| <hr/> | | | | |

Mean Difference = 2.7075

Levene's Test for Equality of Variances: $F = .043$ $P = .836$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | 1.47 | 271 | .144 | 1.846 | (-.927, 6.342) |
| Unequal | 1.42 | 53.69 | .161 | 1.907 | (-1.115, 6.530) |
| <hr/> | | | | | |

Analysis of follow-up DIT group means for N2-score by prep school attendance status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The follow-up sample average difference between the prep school group ($n=41$) and non-prep school group ($n=232$) for DIT N2-scores was 2.7075 ($t=1.47$, $df=271$, $p=.144$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.043$, $P=.836$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up N2-score between cadets attending a prep school and cadets not

attending prep school was between $-.927$ and 6.342 . Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher non-prep school group follow-up mean on N2-score than the prep school group.

Hypothesis 6

There will be no group differences between cadet moral judgment (entry and follow-up DIT score) and cadet gender.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry and follow-up DIT scores (P and N2) for the male group of cadets versus the female group of cadets. Tables 32 and 33 display the independent sample t-test results of entry P-scores and N2-scores by gender. Tables 34 and 35 present the independent samples t-test results of follow-up P and N2-scores by gender.

Table 32: Independent Samples T-test of Entry DIT P-score by Gender

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------|--------------------|---------|--------|------------|
| P-Score | | | | |
| Female | 158 | 29.0608 | 12.740 | 1.014 |
| Male | 822 | 28.5040 | 12.405 | .433 |

Table 32 (continued)

Mean Difference = .5567

Levene's Test for Equality of Variances: $F = .020$ $P = .886$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | .51 | 978 | .607 | 1.082 | (-1.567, 2.681) |
| Unequal | .51 | 218.05 | .614 | 1.102 | (-1.615, 2.729) |

Analysis of entry DIT group means for P-score by gender indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could not be rejected at the .05 level. The entry sample average difference between the males ($n=822$) and females ($n=158$) for DIT P-scores was .5567 ($t=.51$, $df=978$, $p=.607$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.020$, $P=.886$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry P-score between male cadets and female cadets was between -1.567 and 2.681. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher Female cadet entry mean on P-score than male cadets.

Table 33: Independent Samples T-test of Entry DIT N2-score by Gender

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------|--------------------|---------|-------|------------|
| N2-Score | | | | |
| Female | 158 | 35.2263 | 8.595 | .684 |
| Male | 822 | 35.4555 | 8.209 | .286 |

Mean Difference = -.2291

Levene's Test for Equality of Variances: $F = .475$ $P = .491$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | -.32 | 978 | .750 | .719 | (-1.639, 1.181) |
| Unequal | -.31 | 215.60 | .758 | .741 | (-1.690, 1.232) |

Analysis of entry DIT group means for N2-score by gender indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The entry sample average difference between the males ($n=822$) and females ($n=158$) for DIT N2-scores was $-.2291$ ($t=-.32$, $df=978$, $p=.750$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.475$, $P=.491$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry N2-score between male cadets and female cadets was between -1.639 and 1.181 . Since the confidence interval did

include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly lower Female cadet entry mean on N2-score than male cadets.

Table 34: Independent Samples T-test of Follow-up DIT P-score by Gender

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------|-----------------|---------|--------|------------|
| P-Score | | | | |
| Female | 29 | 44.5966 | 17.397 | 3.231 |
| Male | 240 | 38.1950 | 15.462 | .998 |

Mean Difference = 6.4016

Levene's Test for Equality of Variances: $F = 1.176$ $P = .279$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|-----------------|
| Equal | 2.08 | 267 | .039 | 3.082 | (.334, 12.469) |
| Unequal | 1.89 | 33.56 | .067 | 3.381 | (-.473, 13.276) |

Analysis of follow-up DIT group means for P-score by gender indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could be rejected at the .05 level. The follow-up sample average difference between the males ($n=240$) and females ($n=29$) for DIT P-scores was 6.4016 ($t=2.08$, $df=267$, $p=.039$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances

could not be rejected ($F=1.076$, $P=.279$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up P-score between male cadets and female cadets was between .334 and 12.469. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was rejected. Female cadets scored higher as a group on P-score than male cadets.

Table 35: Independent Samples T-test of Follow-up DIT N2-score by Gender

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------|-----------------|---------|--------|------------|
| <hr/> | | | | |
| N2-Score | | | | |
| Female | 29 | 46.0224 | 11.589 | 2.152 |
| Male | 240 | 41.6685 | 10.772 | .695 |
| <hr/> | | | | |

Mean Difference = 4.3539

Levene's Test for Equality of Variances: $F= .659$ $P= .418$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | 2.04 | 267 | .042 | 2.135 | (.150, 8.558) |
| Unequal | 1.93 | 34.11 | .063 | 2.262 | (-.242, 8.950) |

Analysis of follow-up DIT group means for N2-score by gender indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could be rejected at the .05 level. The

follow-up sample average difference between the males ($n=240$) and females ($n=29$) for DIT N2-scores was 4.3539 ($t=2.04$, $df=267$, $p=.042$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.659$, $P=.418$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up N2-score between male cadets and female cadets was between .150 and 8.558. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was rejected. Female cadets scored higher as a group on N2-score than male cadets.

Hypothesis 7

There will be no correlation between cadet moral judgment (follow-up DIT score) and military performance average (MPA).

Correlation of follow-up DIT P-scores, N2-scores, and cadet MPA was utilized to assess this hypothesis. Correlation assessed whether there were statistically significant relationships between follow-up DIT scores (P and N2) and MPA. Table 36 displays the correlation matrix results for this analysis.

Information on cadet MPA was available for 269 of the 273 cadets that completed the follow-up DIT with useable scores. A Pearson correlation coefficient was computed to investigate the relationship between cadet P-score, cadet N2-score, and MPA. Analysis of the correlation matrix indicated no

significant relationships existed between cadet MPA and follow-up N2-score ($r=.013$, $p=.84$) or follow-up P-score ($r=-.047$, $p=.45$). Although not codified as a stated research purpose of this study, MPA correlated significantly with cadet GPA ($r=.327$, $p<.0001$). Follow-up P and N2 correlated significantly as well ($r=.935$, $p<.0001$).

Table 36: Correlation Coefficients for MPA and GPA with Relationship to Follow-up P-score and N2-score

| | <u>MPACUM</u> | <u>N2</u> | <u>PSCORE</u> | <u>GPACUM</u> |
|---------------|--------------------------|----------------------------|-----------------------------|-----------------------------|
| <u>MPACUM</u> | 1.0000 (269) P= . | .0127 (269) P= .835 | -.0467 (269) P= .446 | .3267* (269) P= .000 |
| <u>N2</u> | ----- | 1.0000 (273) P= . | .9350* (273) P= .000 | .1492* (269) P= .014 |
| <u>PSCORE</u> | ----- | ----- | 1.0000 (273) P= . | .0966 (269) P= .114 |
| <u>GPACUM</u> | ----- | ----- | ----- | 1.0000 (269) P= . |

(*) statistically significant at $p<.05$ (Coefficient / (Cases) / 2-tailed Significance)

Hypothesis 8

There will be no correlation between cadet moral judgment (follow-up DIT score) and grade point average (GPA).

Correlation of follow-up DIT P-scores, N2-scores, and cadet GPA was utilized to assess this hypothesis. The correlation assessed whether there were statistically significant relationships between follow-up DIT scores (P and N2) and GPA. Table 36 displays the correlation matrix results for this analysis.

Information on cadet GPA was available for 269 of the 273 cadets that completed the follow-up DIT with useable scores. A Pearson correlation coefficient was computed to investigate the relationship between cadet P-score, cadet N2-score, and GPA. Analysis of the correlation matrix indicated a significant relationship existed between cadet GPA and follow-up N2-score ($r=.149$, $p=.014$). The correlation matrix did not indicate a significant relationship between GPA and follow-up P-score ($r=.0966$, $p=.114$).

Hypothesis 9

There are no group differences in cadet moral judgment (entry and follow-up DIT score) with relationship to the military academy graduation status of a cadet's parents or siblings.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry

and follow-up DIT scores (P and N2) for the group of cadets that had parents or siblings that graduated from a military academy and those cadets that did not.

Tables 37 and 38 display the independent samples t-test results of entry P-scores and N2-scores for parental graduation status. Tables 39 and 40 present the independent samples t-test results of entry P-scores and N2-scores for sibling graduation status. Tables 41 and 42 display the independent sample t-test results of follow-up P-scores and N2-scores for parental graduation status. Tables 43 and 44 present the independent samples t-test results of follow-up P-scores and N2-scores for sibling graduation status.

Table 37: Independent Samples T-test of Entry DIT P-score by Parental Graduation Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|-----------------|--------------------|---------|--------|------------|
| <hr/> | | | | |
| P-Score | | | | |
| Parent Grad-No | 935 | 28.6243 | 12.454 | .407 |
| Parent Grad-Yes | 45 | 27.9600 | 12.610 | 1.880 |

Mean Difference = .6643

Levene's Test for Equality of Variances: F= .000 P= .990

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | .35 | 978 | .727 | 1.902 | (-3.068, 4.396) |
| Unequal | .35 | 48.22 | .731 | 1.923 | (-3.203, 4.531) |

Analysis of entry DIT group means for P-score by parental graduation status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The entry sample average difference between the cadets without parent Academy graduates ($n=935$) and cadets with parent Academy graduates ($n=45$) for DIT P-scores was .6643 ($t=.35$, $df=978$, $p=.727$) . Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.000$, $P=.99$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry P-score between cadets without parent graduates and cadets with parent graduates was between -3.068 and 4.396. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher non-Academy graduate parent group entry mean on P-score than the Academy graduate parent group.

Table 38: Independent Samples T-test of Entry DIT N2-score by Parental Graduation Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|-----------------|--------------------|---------|-------|------------|
| <hr/> | | | | |
| N2-Score | | | | |
| Parent Grad-No | 935 | 35.3805 | 8.308 | .272 |
| Parent Grad-Yes | 45 | 36.2084 | 7.437 | 1.109 |
| <hr/> | | | | |

Table 38 (continued)

Mean Difference = -.8279

Levene's Test for Equality of Variances: $F = .752$ $P = .386$

t-test for Equality of Means

| | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Variances | | | | | |
| Equal | -.66 | 978 | .512 | 1.262 | (-3.305, 1.649) |
| Unequal | -.73 | 49.43 | .472 | 1.142 | (-3.121, 1.466) |

Analysis of entry DIT group means for N2-score by parental graduation status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could not be rejected at the .05 level. The entry sample average difference between the cadets without parent Academy graduates ($n=935$) and cadets with parent Academy graduates ($n=45$) for DIT N2-scores was $-.8279$ ($t = -.66$, $df = 978$, $p = .512$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F = .752$, $P = .386$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry N2-score between cadets without parent graduates and cadets with parent graduates was between -3.305 , 1.649 . Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher Academy graduate parent group entry mean on N2-score than the

non-Academy graduate parent group.

Table 39: Independent Samples T-test of Entry DIT P-score by Sibling Graduation Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------------|-----------------|---------|--------|------------|
| P-Score | | | | |
| Sibling-No | 924 | 28.5720 | 12.557 | .413 |
| Sibling-Yes | 56 | 28.9536 | 10.726 | 1.433 |

Mean Difference = -.3816

Levene's Test for Equality of Variances: $F = 5.629$ $P = .018$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|-----------------|
| Equal | -.22 | 978 | .824 | 1.715 | (-3.747, 2.984) |
| Unequal | -.26 | 64.49 | .799 | 1.492 | (-3.361, 2.598) |

Analysis of entry DIT group means for P-score by sibling graduation status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could not be rejected at the .05 level. The entry sample average difference between the cadets without sibling Academy graduates ($n=924$) and cadets with sibling Academy graduates ($n=56$) for DIT P-scores was $-.3816$ ($t = -.26$, $df = 64.49$, $p = .799$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could be rejected ($F = 5.629$, $P = .018$). Rejecting the equal variances null

hypothesis, the values for unequal variances were utilized. The 95% confidence interval for the average difference in entry P-score between cadets without sibling graduates and cadets with sibling graduates was between -3.361 and 2.598. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher Academy graduate sibling group entry mean on P-score than the non-Academy graduate sibling group.

Table 40: Independent Samples T-test of Entry DIT N2-score by Sibling Graduation Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|-------------|-----------------|---------|-------|------------|
| <hr/> | | | | |
| N2-Score | | | | |
| Sibling-No | 924 | 35.4396 | 8.306 | .273 |
| Sibling-Yes | 56 | 35.0708 | 7.676 | 1.026 |
| <hr/> | | | | |

Mean Difference = .3688

Levene's Test for Equality of Variances: $F = .587$ $P = .444$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | .32 | 978 | .746 | 1.138 | (-1.865, 2.603) |
| Unequal | .35 | 63.06 | .729 | 1.062 | (-1.753, 2.490) |

Analysis of entry DIT group means for N2-score by sibling graduation status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The entry sample average difference between the cadets without sibling Academy graduates ($n=924$) and cadets with sibling Academy graduates ($n=56$) for DIT N2-scores was .3688 ($t=-.32$, $df=978$, $p=.746$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.587$, $P=.444$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry N2-score between cadets without sibling graduates and cadets with sibling graduates was between -1.865 and 2.603. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher non-Academy graduate sibling group entry mean on N2-score than the Academy graduate sibling group.

Table 41: Independent Samples T-test of Follow-up DIT P-score by Parental Graduation Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|-----------------|-----------------|---------|--------|------------|
| <hr/> | | | | |
| P-Score | | | | |
| Parent Grad-No | 255 | 38.9808 | 15.833 | .992 |
| Parent Grad-Yes | 14 | 37.1429 | 15.065 | 4.026 |
| <hr/> | | | | |

Table 41 (continued)

Mean Difference = 1.8379

Levene's Test for Equality of Variances: $F = .123$ $P = .726$

t-test for Equality of Means

| | | | | | 95% |
|-----------|---------|-------|------------|------------|------------------|
| Variances | t-value | df | 2-Tail Sig | SE of Diff | CI for Diff |
| Equal | .42 | 267 | .672 | 4.336 | (-6.700, 10.375) |
| Unequal | .44 | 14.62 | .664 | 4.147 | (-7.020, 10.696) |

Analysis of follow-up DIT group means for P-score by parental graduation status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The follow-up sample average difference between the cadets without parent Academy graduates ($n=255$) and cadets with parent Academy graduates ($n=14$) for DIT P-scores was 1.8379 ($t=.42$, $df=267$, $p=.672$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.123$, $P=.726$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up P-score between cadets without parent graduates and cadets with parent graduates was between -6.700 and 10.375. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher non-Academy graduate parent group follow-up

mean on P-score than the Academy graduate parent group.

Table 42: Independent Samples T-test of Follow-up DIT N2-score by Parental Graduation Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|-----------------|-----------------|---------|--------|------------|
| N2-Score | | | | |
| Parent Grad-No | 255 | 42.1238 | 10.943 | .685 |
| Parent Grad-Yes | 14 | 42.3958 | 10.985 | 2.936 |

Mean Difference = -.2720

Levene's Test for Equality of Variances: F= .070 P= .791

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | -.09 | 267 | .928 | 3.004 | (-6.187, 5.643) |
| Unequal | -.09 | 14.45 | .929 | 3.015 | (-6.719, 6.175) |

Analysis of follow-up DIT group means for N2-score by parental graduation status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The follow-up sample average difference between the cadets without parent Academy graduates ($n=255$) and cadets with parent Academy graduates ($n=14$) for DIT N2-scores was $-.272$ ($t=-.09$, $df=267$, $p=.928$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.07$, $P=.791$). Not rejecting the equal

variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up N2-score between cadets without parent graduates and cadets with parent graduates was between -6.187 and 5.643. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher Academy graduate parent group follow-up mean on N2-score than the non-Academy graduate parent group.

Table 43: Independent Samples T-test of Follow-up DIT P-score by Sibling Graduation Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|-------------|--------------------|---------|--------|------------|
| <hr/> | | | | |
| P-Score | | | | |
| Sibling-Yes | 15 | 38.2200 | 19.908 | 5.140 |
| Sibling-No | 254 | 38.9244 | 15.542 | .975 |
| <hr/> | | | | |

Mean Difference = -.7044

Levene's Test for Equality of Variances: $F = 2.607$ $P = .108$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | -.17 | 267 | .867 | 4.199 | (-8.971, 7.562) |
| Unequal | -.13 | 15.02 | .895 | 5.232 | (-11.854, 10.445) |
| <hr/> | | | | | |

Analysis of follow-up DIT group means for P-score by sibling graduation status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The follow-up sample average difference between the cadets without sibling Academy graduates ($n=254$) and cadets with sibling Academy graduates ($n=15$) for DIT P-scores was $-.7044$ ($t=-.17$, $df=267$, $p=.867$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=2.607$, $P=.108$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up P-score between cadets without sibling graduates and cadets with sibling graduates was between -8.971 and 7.562 . Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher non-Academy graduate sibling group follow-up mean on P-score than the Academy graduate sibling group.

Table 44: Independent Samples T-test of Follow-up DIT N2-score by Sibling Graduation Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|-------------|--------------------|---------|--------|------------|
| <hr/> | | | | |
| N2-Score | | | | |
| Sibling-Yes | 15 | 41.6602 | 13.526 | 3.492 |
| Sibling-No | 254 | 42.1661 | 10.783 | .677 |
| <hr/> | | | | |

Table 44 (continued)

Mean Difference = -.5060

Levene's Test for Equality of Variances: $F = 1.665$ $P = .198$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | -.17 | 267 | .862 | 2.908 | (-6.232, 5.220) |
| Unequal | -.14 | 15.07 | .889 | 3.557 | (-8.085, 7.073) |

Analysis of follow-up DIT group means for N2-score by sibling graduation status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could not be rejected at the .05 level. The follow-up sample average difference between the cadets without sibling Academy graduates ($n=254$) and cadets with sibling Academy graduates ($n=15$) for DIT N2-scores was $-.506$ ($t = -.17$, $df=267$, $p=.862$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=1.665$, $P=.198$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up N2-score between cadets without sibling graduates and cadets with sibling graduates was between -6.232 and 5.220 . Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two groups was 0 in the population was not rejected. Sampling error could not be rejected as a possible reason for the slightly higher non-Academy graduate sibling group follow-up mean on N2-score than the Academy graduate sibling group.

Hypothesis 10

There are no group differences in cadet moral reasoning (entry and follow-up DIT score) with relationship to entrance waiver status.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry and follow-up DIT scores (P and N2) for the group of cadets that required an entry waiver to enter the Academy and those cadets that did not require a waiver to enter the Academy. Tables 45 and 46 display the independent samples t-test results of entry P-scores and N2-scores for entry waiver status. Tables 47 and 48 present the independent samples t-test results of follow-up P-scores and N2-scores for entry waiver status.

Table 45: Independent Samples T-test of Entry DIT P-score for Waiver

| Variable | Number of Cases | Mean | SD | SE of Mean |
|------------|--------------------|---------|--------|------------|
| P-Score | | | | |
| Waiver-Yes | 157 | 26.9975 | 12.854 | 1.026 |
| Waiver-No | 823 | 28.8983 | 12.362 | .431 |

Mean Difference = -1.9008

Levene's Test for Equality of Variances: F= .214 P= .644

Table 45 (continued)

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | -1.75 | 978 | .080 | 1.084 | (-4.027, .226) |
| Unequal | -1.71 | 214.64 | .089 | 1.113 | (-4.094, .292) |

Analysis of entry DIT group means for P-score by entry waiver status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could not be rejected at the .05 level. The incoming sample average difference between the no waiver group ($n=823$) and the waiver group ($n=157$) for DIT P-scores was 1.9008 ($t=1.75$, $df=978$, $p=.080$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.214$, $P=.644$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry P-score between cadets with waivers and cadets without waivers was between -4.027 and .226. Since the confidence interval includes the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population could not be rejected. The slight differences in entry sample means for DIT P-score for cadets not requiring entry waiver into the Academy and the group of cadets that required waivers to enter USAFA could be due to sampling error.

Table 46: Independent Samples T-test of Entry DIT N2-score for Waiver

| Variable | Number of Cases | Mean | SD | SE of Mean |
|-----------------|--------------------|---------|-------|------------|
| N2-Score | | | | |
| Waiver-Yes | 157 | 33.6248 | 8.880 | .709 |
| Waiver-No | 823 | 35.7607 | 8.107 | .283 |

Mean Difference = -2.1359

Levene's Test for Equality of Variances: $F = 4.141$ $P = .042$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | -2.98 | 978 | .003 | .717 | (-3.543, -.728) |
| Unequal | -2.80 | 208.55 | .006 | .763 | (-3.640, -.632) |

Analysis of entry DIT group means for N2-score by entry waiver status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could be rejected at the .05 level. The entry sample average difference between the no waiver group ($n=823$) and the waiver group ($n=157$) for DIT N2-scores was 2.1359 ($t=2.80$, $df=208.55$, $p=.006$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could be rejected ($F=4.141$, $P=.042$). Rejecting the equal variances null hypothesis, the values for unequal variances were utilized. The 95% confidence interval for the average difference in entry N2-score between cadets with waivers and cadets without waivers was between 0.632 and 3.640. Since the confidence interval did not include the value of 0, the

null hypothesis that the average difference between the two measurements was 0 in the population was rejected. Cadets not requiring entry waiver into the Academy scored slightly higher as a group on N2-score than the group of cadets that required waivers to enter USAFA.

Table 47: Independent Samples T-test of Follow-up DIT P-score for Waiver

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------------|--------------------|---------|--------|------------|
| P-Score | | | | |
| Waiver-No | 233 | 39.9142 | 15.364 | 1.007 |
| Waiver-Yes | 36 | 32.2250 | 16.955 | 2.826 |

Mean Difference = 7.6892

Levene's Test for Equality of Variances: $F = .319$ $P = .573$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | 2.76 | 267 | .006 | 2.790 | (2.195, 13.183) |
| Unequal | 2.56 | 44.34 | .014 | 3.000 | (1.645, 13.734) |

Analysis of follow-up DIT group means for P-score by entry waiver status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could be rejected at the .05 level. The follow-up sample average difference between the no waiver group ($n=233$) and the waiver group ($n=36$) for DIT P-scores was 7.6892 ($t=2.76$, $df=267$, $p=.006$). Looking at the Levene test for equality of variances, the null

hypothesis of equal variances could not be rejected ($F=.319$, $P=.573$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up P-score between cadets with waivers and cadets without waivers was between 2.195 and 13.183. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements is 0 in the population was rejected. Cadets not requiring entry waiver into the Academy scored higher as a group on P-score than the group of cadets that required waivers to enter USAFA.

Table 48: Independent Samples T-test of Follow-up DIT N2-score for Waiver

| Variable | Number of Cases | Mean | SD | SE of Mean |
|------------|--------------------|---------|--------|------------|
| N2-Score | | | | |
| Waiver-No | 233 | 42.9810 | 10.523 | .689 |
| Waiver-Yes | 36 | 36.6814 | 12.018 | 2.003 |

Mean Difference = 6.2996

Levene's Test for Equality of Variances: $F= .551$ $P= .458$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | 3.28 | 267 | .001 | 1.922 | (2.516, 10.083) |
| Unequal | 2.97 | 43.69 | .005 | 2.118 | (2.029, 10.570) |

Analysis of follow-up DIT group means for N2-score by entry waiver status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could be rejected at the .05 level. The follow-up sample average difference between the no waiver group ($n=233$) and the waiver group ($n=36$) for DIT N2-scores was 6.2996 ($t=3.28$, $df=267$, $p=.001$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.511$, $P=.458$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up N2-score between cadets with waivers and cadets without waivers was between 2.516 and 10.083. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. Cadets not requiring entry waiver into the Academy scored higher as a group on N2-score than the group of cadets that required waivers to enter USAFA.

Hypothesis 11

There are no group differences in cadet moral reasoning (entry and follow-up DIT score) with relationship to prior military service history.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry and follow-up DIT scores (P and N2) for the group of cadets that had prior

military service before his/her attendance at USAFA and those cadets that did not have prior military service. Tables 49 and 50 display the independent samples t-test results of entry P-scores and N2-scores for prior military service status. Tables 51 and 52 present the independent samples t-test results of follow-up P-scores and N2-scores for prior military service status.

Table 49: Independent Samples T-test of Entry DIT P-score for Prior Military Service

| Variable | Number of Cases | Mean | SD | SE of Mean |
|--------------------|--------------------|---------|--------|------------|
| <hr/> | | | | |
| P-Score | | | | |
| Prior Military-No | 874 | 28.9348 | 12.521 | .424 |
| Prior Military-Yes | 106 | 25.7821 | 11.579 | 1.125 |

Mean Difference = 3.1527

Levene's Test for Equality of Variances: $F = .648$ $P = .421$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | 2.47 | 978 | .014 | 1.278 | (.645, 5.660) |
| Unequal | 2.62 | 136.56 | .010 | 1.202 | (.776, 5.529) |

Analysis of entry DIT group means for P-score by prior military service status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could be rejected at the .05 level. The entry sample average difference between the no prior military

service group (n=874) and the prior military service group (n=106) for DIT P-scores was 3.1527 ($t=2.47$, $df=978$, $p=.014$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=.648$, $P=.421$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry P-score between cadets with prior military service and cadets without prior military service was between .645 and 5.66. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. Cadets without prior military service scored higher as a group on entry P-score than the group of cadets that had prior military service before entering USAFA.

Table 50: Independent Samples T-test of Entry DIT N2-score for Prior Military Service

| Variable | Number of Cases | Mean | SD | SE of Mean |
|--------------------|--------------------|---------|-------|------------|
| <hr/> | | | | |
| N2-Score | | | | |
| Prior Military-No | 874 | 35.6043 | 8.214 | .278 |
| Prior Military-Yes | 106 | 33.8864 | 8.587 | .834 |

Mean Difference = 1.7180

Levene's Test for Equality of Variances: $F= 1.096$ $P= .295$

Table 50 (continued)

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|--------|------------|------------|--------------------|
| Equal | 2.02 | 978 | .043 | .849 | (.052, 3.384) |
| Unequal | 1.95 | 129.41 | .053 | .879 | (-.021, 3.457) |

Analysis of entry DIT group means for N2-score by prior military service status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could be rejected at the .05 level. The entry sample average difference between the no prior military service group ($n=874$) and the prior military service group ($n=106$) for DIT N2-scores was 1.718 ($t=2.02$, $df=978$, $p=.043$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=1.096$, $P=.295$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in entry N2-score between cadets with prior military service and cadets without prior military service was between .052 and 3.384. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. Cadets without prior military service scored higher as a group on entry N2-score than the group of cadets that had prior military service before entering USAFA.

Table 51: Independent Samples T-test of Follow-up DIT P-score for Prior Military Service

| Variable | Number of Cases | Mean | SD | SE of Mean |
|--------------------|-----------------|---------|--------|------------|
| P-Score | | | | |
| Prior Military-No | 243 | 39.4523 | 15.840 | 1.016 |
| Prior Military-Yes | 30 | 35.7733 | 14.971 | 2.733 |

Mean Difference = 3.6789

Levene's Test for Equality of Variances: $F = .978$ $P = .324$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | 1.21 | 271 | .228 | 3.048 | (-2.321, 9.679) |
| Unequal | 1.26 | 37.48 | .215 | 2.916 | (-2.227, 9.585) |

Analysis of follow-up DIT group means for P-score by prior military service status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could not be rejected at the .05 level. The follow-up sample average difference between the no prior military service group ($n=243$) and the prior military service group ($n=30$) for DIT P-scores was 3.6789 ($t=1.21$, $df=271$, $p=.228$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F = .978$, $P = .324$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up P-score between cadets with prior military service

and cadets without prior military service was between -2.321 and 9.679. Since the confidence interval included the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was not rejected. The observed difference in follow-up sample means for DIT P-score for cadets having prior military service and cadets without prior military service could be due to sampling error.

Table 52: Independent Samples T-test of Follow-up DIT N2-score for Prior Military Service

| Variable | Number of Cases | Mean | SD | SE of Mean |
|--------------------|-----------------|---------|--------|------------|
| N2-Score | | | | |
| Prior Military-No | 243 | 42.6360 | 10.767 | .691 |
| Prior Military-Yes | 30 | 39.1823 | 11.824 | 2.159 |

Mean Difference = 3.4538

Levene's Test for Equality of Variances: $F = .245$ $P = .621$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|-----------------|
| Equal | 1.64 | 271 | .102 | 2.106 | (-.693, 7.601) |
| Unequal | 1.52 | 35.20 | .136 | 2.267 | (-1.147, 8.054) |

Analysis of follow-up DIT group means for N2-score by prior military service status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could not be

rejected at the .05 level. The follow-up sample average difference between the no prior military service group ($n=243$) and the prior military service group ($n=30$) for DIT N2-scores was 3.4538 ($t=1.64$, $df=271$, $p=.102$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F= .245$, $P= .621$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up N2-score between cadets with prior military service and cadets without prior military service was between $-.693$ and 7.601 . Since the confidence interval included the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was not rejected. The observed difference in follow-up sample means for DIT N2-score for cadets having prior military service and cadets without military service could be due to sampling error.

Hypothesis 12

There are no group differences in cadet moral reasoning (follow-up DIT score) with relationship to senior leadership position status.

Independent sample t-tests of follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in follow-up DIT scores (P and N2) for the group of cadets that were in military leadership positions and those cadets that were not filling military leadership positions.

Tables 53 and 54 present the independent samples t-test results of follow-up P-scores and N2-scores for leadership position status.

Table 53: Independent Samples T-test of Follow-up DIT P-score for Leadership Position Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|----------------|-----------------|---------|--------|------------|
| P-Score | | | | |
| Leader-No | 261 | 38.8000 | 15.861 | .982 |
| Leader-Yes | 12 | 44.4417 | 12.812 | 3.698 |

Mean Difference = -5.6417

Levene's Test for Equality of Variances: $F = 2.443$ $P = .119$

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | -1.21 | 271 | .226 | 4.650 | (-14.796, 3.512) |
| Unequal | -1.47 | 12.60 | .165 | 3.826 | (-13.935, 2.652) |

Analysis of follow-up DIT group means for P-score by leadership position status indicated the null hypothesis $H_1 = H_0$ or $H_1 - H_0 = 0$ could not be rejected at the .05 level. The follow-up sample average difference between the non-leadership group ($n=261$) and the leadership group ($n=12$) for DIT P-scores was -5.6417 ($t = -1.21$, $df = 271$, $p = .226$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F = 2.443$

P= .119). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up P-score between cadets with leadership status and cadets without leadership status was between -14.796 and 3.512. Since the confidence interval did include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was not rejected. Sampling error could not be ruled out as a possible reason for cadets in leadership positions scoring higher as a group on P-score than the group of cadets that were not filling leadership positions.

Table 54: Independent Samples T-test of Follow-up DIT N2-score for Leadership Position Status

| Variable | Number of Cases | Mean | SD | SE of Mean |
|------------|-----------------|---------|--------|------------|
| <hr/> | | | | |
| N2-Score | | | | |
| Leader-No | 261 | 41.9462 | 10.933 | .677 |
| Leader-Yes | 12 | 49.0059 | 8.403 | 2.426 |
| <hr/> | | | | |

Mean Difference = -7.0597

Levene's Test for Equality of Variances: F= 2.524 P= .113

t-test for Equality of Means

| Variances | t-value | df | 2-Tail Sig | SE of Diff | 95% CI for Diff |
|-----------|---------|-------|------------|------------|--------------------|
| Equal | -2.21 | 271 | .028 | 3.201 | (-13.362, -.758) |
| Unequal | -2.80 | 12.78 | .015 | 2.518 | (-12.510, -1.609) |
| <hr/> | | | | | |

Analysis of follow-up DIT group means for N2-score by leadership position status indicated the null hypothesis $H_1=H_0$ or $H_1-H_0=0$ could be rejected at the .05 level. The follow-up sample average difference between the non-leadership group ($n=261$) and the leadership group ($n=12$) for DIT N2-scores was -7.0597 ($t=-2.21$, $df=271$, $p=.028$). Looking at the Levene test for equality of variances, the null hypothesis of equal variances could not be rejected ($F=2.524$, $P=.113$). Not rejecting the equal variances null hypothesis, the values for equal variances were utilized. The 95% confidence interval for the average difference in follow-up N2-score between cadets with leadership status and cadets without leadership status was between -13.362 and $-.758$. Since the confidence interval did not include the value of 0, the null hypothesis that the average difference between the two measurements was 0 in the population was rejected. Cadets in leadership positions scored higher as a group on N2-score than the group of cadets that were not filling leadership positions.

Qualitative Analysis of the Moral Experience Questionnaire

Thus far in Chapter 4, the discussion of results has focused on the first twelve research hypotheses designated as the quantitative portion of this dissertation research. Attention is now directed toward the second section of this chapter, which presents the qualitative analysis of cadet Moral Experience Questionnaire (MEQ) responses.

In order to obtain a descriptive and more complete picture of Air Force

Academy cadet moral judgment development, the Moral Experience Questionnaire (MEQ) was administered along with the DIT during the follow-up study in January 1999. The MEQ (Appendix B) was designed as an open-ended questionnaire providing cadet subjects with an opportunity to voice his/her perception of the Academy experiences that either contributed to or restricted moral judgment development.

The results of the MEQ will be presented in seven main parts. The first part reports the demographic data relevant to the MEQ administration. The next six parts focus on discussion of hypothesis 13, providing analyses of one closed-ended and five open-ended questions asked on the MEQ (Table 55).

Table 55: Key Questions on the Moral Experience Questionnaire

-
- Has your attendance at the USAF Academy contributed to your ability to reason through moral dilemmas?
 - What Academy experiences (if any) contributed to your ability to reason through moral issues?
 - During your attendance at USAFA, what non-Academy experiences contributed to your ability to reason through moral issues?
 - Did any USAFA or non-USAFA experiences restrict your ability to reason through moral issues?
 - How did the Academy faculty and staff contribute to your ability to reason through moral issues?
 - How did your peers/fellow cadets contribute to your ability to reason through moral issues?
-

Demographics of the Moral Experience Questionnaire Sample

The MEQ was administered to a sample of Class of 1999 cadets through the MAS-440 and MAS-472 courses. Of the 398 cadets available in the MAS-440/MAS-472 sampling frame, 310 (77.9%) completed the MEQ. A slightly lower participation rate was realized on the MEQ than on the DIT. The slight deviation in participation rate was likely attributed to a stringent statement contained on the informed consent document (Appendix C). Military legal authorities required a Uniformed Code of Military Justice (UCMJ) statement on the informed consent document stipulating disciplinary action for subjects providing personal identification coupled with implicating statements related to criminal conduct or honor code violations. The researcher attempted to prevent this statement from being included on the informed consent document in order to preserve confidentiality and anonymity. The researcher reminded all subjects not to include personal identification on the MEQ to preserve his/her anonymity. Although some subjects provided implicating statements of legal and honor code violations, no subjects provided identifying information that could be used to trace their identity--all responses remained anonymous and confidential.

Demographic information concerning the MEQ sample (n=310) is reported in Table 56. Table 56 includes two demographic, self-report items contained on the MEQ. Question 1 on the MEQ requested Military Art and Science (MAS) course of assignment and question 2 on the MEQ requested subject gender. The gender participation rate on the MEQ was representative of the larger

population. At follow-up, females represented 14.6% of the Class of 1999 population. Females represented 12.3% of the MEQ respondents.

Table 56: Demographics of the MEQ Sample (n=310)

| Variable | n | % |
|--------------------------|-----|------|
| Gender | | |
| Male | 272 | 87.7 |
| Female | 38 | 12.3 |
| Course of Assignment | | |
| MAS-472 (Leadership) | 15 | 4.8 |
| MAS-440 (Non-leadership) | 295 | 95.2 |

Analyses of the MEQ Results for Hypotheses 13

The remaining six parts of this qualitative section present the findings relevant to hypothesis 13. Hypothesis 13 was stated in broad terms in order to ensure subject perceptions would guide descriptions of key events and relationships in moral judgment development at the Air Force Academy. One closed-ended MEQ question and five open-ended MEQ questions were employed to capture cadet perceptions of the types of events and relationships that contributed to, or restricted, moral judgment development. Coding of MEQ responses was conducted in order to categorize and quantify the experiences/relationships identified by the subjects. Cadet responses for each question were read to produce coding categories. As the researcher read each

response, he coded the entire statement or statement fragments according to the inductively devised category they best described. As new categories emanated, the responses of already coded subjects were reanalyzed to determine if statements related to the new coding category were apparent.

Table 57 provides statements showing examples of how cadet MEQ responses were coded. Coding explanations are provided after each sample statement.

Table 57: MEQ Response Coding Examples

Statement (Coding)

"Honor lessons and punishment for honor violations made me think about the issues more. Fear of getting in trouble and ending a career before it's started." (Honor Code, Honor Lesson, Honor Board, Fear, and Other's Trouble)

"I have had to write letters of disenrollment for fellow cadets as an honor chair which forces me to consider right versus loyalty." (Honor Code, Honor Board, Honor Representative, Leader, Decision, Other's Trouble, and Reflection)

"Experiences with other people of different backgrounds have led to moral issue discussion which would force me to think and come to a conclusion about a moral issue." (Cultural Diversity, Peer Discussion, and Reflection)

The samples provide examples of how fragments of subject statements are coded. Responses alluding to the honor code or honor system were coded under the general honor code category. Further refinement of categorization was accomplished if the subjects indicated that experience with honor lessons,

an honor board, or being an honor officer were significant. A short statement such as the second statement in Table 57 could result in multiple coding categorizations. In that example, the honor representative was in a position of leadership and had to make decisions about others subordinate to them. Reflection about the subordinate's problems was significant experience. This short statement resulted in coding of seven categories (Honor Code, Honor Board, Honor Representative, Leader, Decision, Other's Trouble, and Reflection). The remainder of this chapter is organized to provide a descriptive presentation of the MEQ coding results following a restatement of each MEQ question (MEQ questions 3 through 8).

Hypothesis 13

Cadet responses on the MEQ will indicate that USAFA programs and courses directed at ethical and moral growth and living under the Academy Honor Code provided the most stimulus to their moral development.

Moral Experience Questionnaire Item 3

Has your attendance at the USAF Academy contributed to your ability to reason through moral dilemmas (Yes or No)?

This closed-ended question sought dichotomous categorization of responses from subjects. Table 58 presents the raw results of the responses. Additionally, Table 58 presents Item 3 responses by gender.

Table 58: Categorization of MEQ Item 3 Responses (n=310)

| Variable | n | % |
|--------------------------------|-----|------|
| Item 3 Responses | | |
| Yes | 259 | 83.5 |
| No | 51 | 16.5 |
| Female Item 3 Responses (n=38) | | |
| Yes | 31 | 81.6 |
| No | 7 | 18.4 |
| Male Item 3 Responses (n=272) | | |
| Yes | 228 | 83.8 |
| No | 44 | 16.2 |

Compilation of the responses for MEQ question 3 indicated 83.5 percent of the subjects agreed that his/her attendance at USAFA contributed to his/her ability to reason through moral dilemmas. Further investigation of the responses by gender indicated similarity in choices. Of the 272 males completing the MEQ, 83.8% agreed that his attendance at USAFA contributed to his ability to reason through moral dilemmas. Of the 38 females completing the MEQ, 81.6% agreed that her attendance at USAFA contributed to her ability to reason through moral dilemmas.

Moral Experience Questionnaire Item 4

What Academy experiences (if any) contributed to your ability to reason through moral issues?

Item 4 represented the initial open-ended question on the MEQ. It

attempted to capture cadet perceptions of contributing USAFA experiences in moral judgment development. Cadet responses to this question were coded into 18 separate categories to produce a descriptive picture of the Academy experiences that contributed to cadet moral judgment development. Table 59 presents the 18 coding classifications that emanated from the Item 4 responses.

Table 59: Coding of MEQ Item 4 Responses (n=310)

| Coding Classification | n | % |
|---|-----|------|
| <u>Honor Code</u> : Subjects identified USAFA honor code | 114 | 36.8 |
| <u>Reflection</u> : Indicated that their own personal reflection about issues was important. | 111 | 35.8 |
| <u>Philosophy 310</u> : Identified the Philosophy 310 course or philosophy courses as a positive intervention. | 97 | 31.3 |
| <u>Decision Responsibility/Experience</u> : Identified the experience of having to make personal decision or decisions that would effect others/subordinates. | 82 | 26.5 |
| <u>Honor Lesson</u> : Mentioned programmed intervention of honor lessons. | 81 | 26.1 |
| <u>Honor Board</u> : Identified having an honor board, sitting on an honor board, or having experience with a peer who had an honor board. | 61 | 19.7 |
| <u>Observation of Others Who Had Troubles</u> : Indicated that they learned by watching others (vicarious learning). Learned from other cadets that got into trouble. | 61 | 19.7 |
| <u>Peer Discussion</u> : Identified the enlightenment provided by discussions with peers. | 51 | 16.5 |

Table 59 (continued)

| Coding Classification | n | % |
|--|----|------|
| <u>Course Lecture</u> : Identified academic lectures as having an impact. This was a generic category containing general references to academic courses or specific courses other than Philosophy 310. | 50 | 16.1 |
| <u>Leader</u> : Identified a personal experience where they were a leader and were responsible for making decisions for/about others. | 44 | 14.2 |
| <u>Officer Contact/Example</u> : Indicated that discussions with and role-modeling by officers had a positive impact. | 40 | 12.9 |
| <u>Cultural Diversity</u> : Identified the cultural, gender, and opinionated diversity of USAFA as providing additional/broader viewpoints. | 23 | 7.4 |
| <u>Cadet Chapel/Religious Experience</u> : Identified religious experience at USAFA to include participation in Academy chapel programs | 20 | 6.5 |
| <u>Fear</u> : Identified fear of the honor code and peer pressure as a positive influence. | 19 | 6.1 |
| <u>Four-Class Year</u> : Indicated that basic training and the first-year experience (fourth-class system) provided a strong foundation. | 16 | 5.2 |
| <u>Advice</u> : Identified pointed advice from Academy officials or fellow-cadets as having an impact. | 15 | 4.8 |
| <u>Honor Representative</u> : Indicated they were honor representatives in the Cadet Wing. | 12 | 3.9 |
| <u>Athletics</u> : Identified contributions of athletic experience. | 3 | 1.0 |

The coding categories for MEQ Item 4 indicated a spread of events and relationships having symbolic significance to the subjects. The most commonly identified experiences were the USAFA honor code and its subsequent categories of honor lesson training, honor boards, and honor representative duties. Academically, course discussions of moral issues were significant with 31.3 percent of the subjects identifying the Philosophy 310 core course as having an important impact on their ability to recognize and reason through moral issues. Discussion with, and advice from, peers and officers provided a broader perspective to some cadets as they attempt to reason through moral issues. Vicarious learning through the experiences of other cadets, the cohesion instilled during the fourth-class year, and the cultural diversity experienced in the dormitory atmosphere all combined to produce examples for cadets to formulate their moral judgment.

Since honor violations at the Academy could result in dismissal, fear of getting kicked-out encouraged some students to pursue a higher moral tone. A small, but noticeable, group of subjects shared a devotion to spiritual experiences at the Academy as their moral judgment guide. A few cadets indicated that experiences on the athletic fields aided their ability to reason through moral dilemmas. Leadership and having responsibility for decisions that affect others encouraged a large portion of the respondents to reason carefully through moral issues. Many of these coding categories also combined to create a moment of reflection for a substantial number of respondents. Some 35.8% of

the cadets identified their own personal reflection about moral issues as a significant event. This reflection evolved from situational issues around them that forced them to consider options more carefully.

Moral Experience Questionnaire Item 5

During your attendance at USAFA, what non-Academy experiences contributed to your ability to reason through moral issues?

Item 5 attempted to partial-out the types of non-USAFA experiences that contributed to moral judgment development during the four years of Academy attendance. Cadet responses to this question were coded into 15 separate categories to produce a descriptive picture of the non-Academy experiences that contributed to cadet moral judgment development. Table 60 presents the 15 coding classifications that emanated from the Item 5 responses.

Table 60: Coding of MEQ Item 5 Responses (n=310)

| Coding Classification | n | % |
|--|----|------|
| <u>Talking with Civilians</u> : Identified discussion with civilians as broadening their perspectives. | 90 | 29.0 |
| <u>Dissonance</u> : Indicated that differences were apparent between the civilian sector and military sector and that dissonance helped them reason or forced them to reflect. | 88 | 28.4 |
| <u>Summer/Winter/Spring Breaks</u> : Indicated experiences away from USAFA during weekends and academic breaks had an impact. | 87 | 28.1 |

Table 60 (continued)

| Coding Classification | n | % |
|--|----|------|
| <u>High School Friends</u> : Subjects identified continued relationships with high school peers or current age cohort peers outside of USAFA. | 80 | 25.8 |
| <u>Church</u> : Identified personal religious convictions. | 56 | 18.1 |
| <u>Family</u> : Identified family relationships, experiences, and values. | 56 | 18.1 |
| <u>Growing-up</u> : Indicated that upbringing and day-to-day maturity aided them. | 32 | 10.3 |
| <u>Civilian Laws</u> : Identified conflict with civilian laws, rules, and regulations. | 31 | 10.0 |
| <u>Experience with or around Drugs/Alcohol</u> : Identified alcohol and drug-related experiences where subject had to deal with peer pressure and individual choice. | 30 | 9.7 |
| <u>Partying/Socializing</u> : Identified social experiences as a contributing factor in their moral judgment development. | 25 | 8.1 |
| <u>Dating</u> : Identified personal romantic relationships. | 24 | 7.7 |
| <u>Politics</u> : Identified current political issues and world events (1995-1999) as having an impact. | 20 | 6.5 |
| <u>President Clinton/Monica Lewinsky Affair</u> : Identified the conduct of President Clinton and impeachment proceedings. | 15 | 4.8 |
| <u>Sponsor Program</u> : Identified the USAFA sponsor family program as having a positive impact. | 8 | 2.6 |
| <u>Service Projects</u> : Identified the positive experience gained from community service. | 6 | 1.9 |

The coding categories for the MEQ Item 5 focus on non-Academy contributions indicated by-products of attending college away from home, differences between military and civilian communities, and current historical events as having symbolic significance to the subjects.

A small percentage of subjects found it important to generally describe politics and world events as instigators for further concern for moral judgment development. More specifically, almost five percent of the subjects identified the President Clinton/Monica Lewinsky affair and impeachment proceedings as current events having an impact on their moral judgment development. This handful percentage of subjects voiced concern over the lying of the president as an ethical failure that forced them to refocus on their ethical and moral responsibilities.

Covering a broad social coding pattern, cadets identified numerous social relationships contributing to their moral judgment development. Planned breaks away from the Academy on weekends and during winter, spring, and summer breaks provided many opportunities for 28% of the subjects to focus on moral judgment issues. Interaction with high school peers while on vacation and dating provided opportunities for subjects to employ moral and ethical reasoning. Subjects discussed the conflict of honesty when they were trying to date two partners at once or obtaining/consuming alcohol while under the legal drinking age. Some cadets identified how they could have taken sexual advantage of inebriated members of the opposite sex but resisted based on employment of

ethical reasoning. Subjects also discussed how peer pressures and the prevalence of alcohol/drugs challenged them to employ higher moral judgment.

Social interaction also included discussions with civilians and the dissonance that emerged between military community norms and the norms of the larger civilian society. Subjects indicated that the more stringent requirements and expectations for moral/ethical conduct in the military encouraged them to continue with the higher moral tone while they participated in the larger civilian society. Some subjects questioned why the military is held to a higher standard. Additionally, some subjects questioned whether the age-related alcohol consumption laws were reasonable.

Societal support structures for cadets attending college away from home were also identified as key moral judgment relationships. Many respondents identified spiritual beliefs as an unequivocal foundation for their moral judgment. Family relationships, experiences, and values were equally identified as key contributors to moral judgment development. On a much smaller scale, the USAF Academy sponsorship program (which provides cadets with a local sponsor family) provided values which subjects could utilize in moral reasoning.

Some subjects failed to identify specific non-Academy contributors to their moral judgment development--opting instead to declare maturation as the reason for their development in moral judgment. Finally, although service learning is a prevalent element of a cadet's Academy experience, only a handful of subjects identified it as a contributing experience in the development of moral judgment.

Moral Experience Questionnaire Item 6

Did any USAFA or non-USAFA experiences restrict your ability to reason through moral issues?

Item 6 attempted to capture the types of USAFA and non-USAFA experiences that restricted moral judgment development during the four years of Academy attendance. Cadet responses to this question were coded into 9 separate categories to produce a descriptive picture of the Academy and non-Academy experiences that restricted cadet moral judgment development. Table 61 presents the 9 coding classifications that emanated from the Item 6 responses.

Table 61: Coding of MEQ Item 6 Responses (n=310)

| Coding Classification | n | % |
|--|-----|------|
| <u>Restrictive Environment</u> : Indicated that the controlled USAFA environment and overabundance of rules restricted their moral experiences and freedom to make moral decisions. | 100 | 32.3 |
| <u>Academy Dogma</u> : Indicated the stringent rules and Party line of USAFA tried to reduce all issues to a black and white approved solution and that this was unrealistic for the real world. | 70 | 22.6 |
| <u>Institutional Examples</u> : Indicated that poor institutional examples forced them to question the relevance of moral reasoning and higher values. | 66 | 21.3 |
| <u>Honor Code</u> : Indicated that adherence to the honor code restricted their ability to reason. | 53 | 17.1 |

Table 61 (continued)

| Coding Classification | n | % |
|---|----|------|
| <u>Peers</u> : Subjects identified peer pressure as a negative influence distracting them from better moral judgment. | 34 | 11.0 |
| <u>Officers</u> : Identified experiences with and observations of poor officer role models. | 29 | 9.4 |
| <u>Lack of Trust</u> : Indicated that lack of trust by the Academy prevented them from having opportunities to experience moral issues. | 23 | 7.4 |
| <u>Busy USAFA Schedule</u> : Indicated that the busy USAFA schedules prevented thoughtful moral reasoning. | 7 | 2.3 |
| <u>Government</u> : Identified other social or political institutions as having a negative impact. | 2 | 0.6 |

Coding for Item 6 on the MEQ focused on the Academy and non-Academy events/relationships that cadets identified as restricting their moral judgment growth. Many of the same response categories that were identified as positive influences emerged as also having a restrictive component. Poor officer role models, unethical/immoral peers, hypocritical institutional examples, a restrictive and time-compacted environment, and narrow institutional dogma were identified as critical negative events/relationships.

Poor examples by officer role models and disturbing institutional examples emerged as hypocritical relationships challenging a subject's need to pursue moral judgment development. Cadets readily identified perceived examples

where officer role models and institutional officials broke or ignored rules. The subjects that identified these examples apparently questioned his/her own need to pursue a higher moral tone if his/her superiors do not.

Subjects also readily identified the restrictive Academy environment as an encumbrance to growth in moral judgment. The strict rules and narrow range of institutional norms limited the breadth of experience for certain cadets. The busy Academy schedule was also criticized for limiting the amount of quality time available for moral judgment reflection. A perceived lack of trust by some Academy officials limited opportunities for cadets to practice moral judgment.

Importantly, 17% of respondents identified the Academy honor code as a restrictive system. The tone of these responses indicated an anti-establishment or rebellious attitude. As such, the respondents appeared to indicate that less personal attention was placed on moral judgment as a way of rebelling against a system that placed so much emphasis on it.

Moral Experience Questionnaire Item 7

How did the Academy faculty and staff contribute to your ability to reason through moral issues?

Item 7 attempted to capture how the faculty and staff at USAFA were able to support and contribute to cadet development in moral judgment. Cadet responses to this question were coded into 11 separate categories to produce a descriptive picture of the faculty and staff contributions to cadet moral judgment

development. Table 62 presents the 11 coding classifications that emanated from the Item 7 responses.

Table 62: Coding of MEQ Item 7 Responses (n=310)

| Coding Classification | n | % |
|--|-----|------|
| <u>Personal Example</u> : Identified officer role modeling and the personal examples shared by faculty members. | 145 | 46.8 |
| <u>Class Discussions</u> : Identified formal and informal class discussions as having a positive impact. | 135 | 43.5 |
| <u>Discussion</u> : Subjects identified private discussions with faculty members as enlightening and supportive. | 131 | 42.3 |
| <u>Philosophy Course</u> : Identified the Philosophy faculty and Philosophy 310 core course as having a positive impact. | 97 | 31.3 |
| <u>Air Force Issues</u> : Indicated that faculty members provided their own Air Force examples and examples of other Air Force officers. | 80 | 25.8 |
| <u>Advice</u> : Identified direct advice from faculty on specific moral dilemmas. | 72 | 23.2 |
| <u>Leadership View</u> : Indicated that the "leader's" view provided by faculty was important. | 63 | 20.3 |
| <u>Negative</u> : Indicated that faculty members had a negative impact as poor examples. | 44 | 14.2 |
| <u>Enforcement</u> : Indicated that faculty enforcement of rules and standards was a positive influence. | 36 | 11.6 |
| <u>Trust</u> : Indicated that faculty trust in them was a motivating influence. | 7 | 2.3 |
| <u>Lack of Trust</u> : Indicated that lack of faculty trust in them was a negative influence. | 3 | 1.0 |

Coding for Item 7 on the MEQ focused on the contributions of Academy faculty and staff. Since USAFA places such a large emphasis on officer role modeling, the researcher was interested in the significant events that cadets would identify. Many reasonable outcomes of role modeling were identified. One-on-one discussions, pointed advice, and classroom discussions were all mentioned as instigators for moral judgment reflection. Personal examples and the leader's view of actual Air Force issues were identified as meaningful experiences. Lacking real Air Force experiences, cadets vicariously learned how officers around them handled real, non-academic moral dilemmas. Officers as enforcers of rules and responsibilities provided some subjects with a stable and guiding influence. Similar to earlier outcomes, the Philosophy 310 course and the assigned faculty were singled-out as having a directed impact on moral judgment growth.

While Item 7 focused on positive influences, a few negative consequences were identified. Lack of trust by some faculty and poor officership role modeling combined to lead some subjects to question the importance of moral judgment.

Moral Experience Questionnaire Item 8

How did your peers/fellow cadets contribute to your ability to reason through moral issues?

Item 8 attempted to more closely capture how peers/fellow cadets

specifically contributed to cadet development in moral judgment. Cadet responses to this question were coded into 10 separate categories to produce a descriptive picture of peer contributions to cadet moral judgment development. Table 63 presents the 10 coding classifications that emanated from the Item 8 responses.

Table 63: Coding of MEQ Item 8 Responses (n=310)

| Coding Classification | n | % |
|--|-----|------|
| <u>Peers Discussion</u> : Subject identified discussions with peers. | 134 | 43.2 |
| <u>Peer Example</u> : Indicated that watching peers and learning from their experience (good and bad) aided their moral judgment. | 127 | 41.0 |
| <u>Peer Support</u> : Indicated that fellow cadets provided support during a period of moral reflection or challenge. | 65 | 21.0 |
| <u>Practice</u> : Indicated practice and experience dealing with moral decision-making with relationship to peers was a growth experience. | 49 | 15.8 |
| <u>Advice</u> : Indicated that peer advice contributed to reasoning through moral issues. | 46 | 14.8 |
| <u>Diversity</u> : Indicated that the range of moral opinions and cultural backgrounds expressed by peers provided more points-of-view to consider during moral reasoning. | 38 | 12.3 |
| <u>Peer Behavioral/Moral Norms</u> : Indicated that the norms of the peer cohort and its associated peer pressure impacted their moral reasoning. | 38 | 12.3 |

Table 63 (continued)

| Coding Classification | n | % |
|---|----|------|
| <u>Toleration versus Friendship:</u> Indicated that the personal struggle associated with the toleration clause of the USAFA honor code and loyalty to their friends had some form of impact on their personal moral growth. This could be interpreted positively or negatively based on the context of the response. | 34 | 11.0 |
| <u>Peer Enforcement:</u> Identified impact of other zealous cadets enforcing rules as a negative influence and also stated that cadets holding them accountable had an influence. | 28 | 9.0 |
| <u>Shared Religious Experience:</u> Suggested that religious experiences and worship associated with members of his/her own peer cohort was an important event. | 12 | 3.9 |

The coding categories for MEQ Item 8 focused on peer relationships at the Academy. Discussions with, and advice from, peers stood-out as significant interactions that contributed to a cadet's ability to adequately reason through moral dilemmas. Support and collective sympathy from peers also served as an enabling relationship. Respondents discovered a sense of security through the commonality of lived experience they shared with their peers. Again, vicarious moral learning occurred by watching the outcomes of good and bad moral judgments of their peers. For many subjects, the day-to-day interaction with peers provided opportunities to practice moral reasoning.

For many respondents, the Academy represented the first opportunity for exposure to a variety of cultural, racial, and gender relationships. This diversity also contributed to moral growth by providing a broader moral perspective. Spirituality also resurfaced in relationship to peer relationships. A small percentage of respondents found supportive comfort through shared religious experiences with peers.

Not all peer experiences related to positive growth. Some respondents indicated that strong peer pressure pushed them to make poor moral decisions. Additionally, the non-toleration clause at the Academy served as a significant object with which many subjects wrestled. Subjects indicated that they had difficulty with the personal struggle, which existed between upholding the non-toleration clause of the honor code versus remaining loyal to friends/classmates.

Additionally, a mixture of responses related to peer enforcement of moral and ethical issues. While some cadets found structure through peer enforcement of institutional rules and regulations, overzealous peer enforcers discouraged others. Certain cadets that were held accountable by their peers became focused on his/her moral judgment responsibilities in order to prevent future shortcomings. On the other hand, certain subjects saw overzealous cadets as another reason to undermine the institution by ignoring their moral judgment responsibilities.

Summary

This chapter presented the results of the quantitative and qualitative portions of the study with relationship to the thirteen stated research questions. It presented the statistical analyses of the DIT scores and demographic data with relationship to the first twelve research questions. Additionally, qualitative analysis of the MEQ responses was provided. The chapter was divided into two major sections.

The first section reported the results for the longitudinal and comparative portions of the study. This first section contained thirteen parts. The first part summarized the demographic data and descriptive statistics for the entry DIT sample, follow-up DIT sample, and paired-DIT scores sample. The remaining twelve parts of the first section presented the statistical analyses for research hypotheses 1 through 12.

Mixed results were reported for the quantitative portion of the study. Research question 1 indicated Class of 1999 cadets increased their usage of principled moral reasoning during their attendance at USAFA. Utilizing matched pair t-tests of incoming and follow-up DIT scores, statistically significant longitudinal changes were realized for the DIT P-index, N2-index, and all stage scores. Longitudinal gains were observed in P-score, N2-score, stage 2 score, stage 5A score, and stage 5B score. Longitudinal losses were observed in stage 3 scores, stage 4 scores, and stage 6 scores.

No significant group differences were observed for research questions 2 (attrition code), 3 (age), and 4 (geographic region). Analysis of research question 5 (preparatory school status) indicated non-prep school cadets scored higher as a group on entry DIT N2-score than prep school cadets. No prep school status group differences were observed on entry DIT P-score, follow-up DIT P-score, or follow-up DIT N2-score.

Analysis of research question 6 (gender) utilized independent sample t-tests. Results indicated no significant gender differences on entry DIT P-score or N2-score. Significant gender differences were observed on follow-up DIT P-score and N2-score with females scoring higher than males.

Correlation was utilized to assess research questions 7 (MPA) and 8 (GPA). No significant relationships existed between MPA and DIT P-score/N2-score. A statistically significant correlation existed between DIT N2-score and GPA, however, no relationship existed between DIT P-score and GPA.

Analysis of research question 9 (parent and sibling Academy graduation status) revealed no significant group differences. Research question 10 (entry waiver status) indicated that non-entry waiver cadets as a group scored higher on entry DIT N2-score, follow-up P-score, and follow-up N2-score than the entry waiver group of cadets. No significant group differences existed on entry P-score.

Research question 11 (prior military service status) indicated that non-prior service cadets scored higher as a group on entry P-score and N2-score

than prior service cadets. No significant group differences existed on follow-up P-score or N2-score.

Research question 12 (leadership status) revealed that cadets in leadership positions scored higher as a group on follow-up N2-score than cadets not occupying leadership positions. No significant group differences existed on follow-up P-score.

The second section focused on research hypothesis 13 and provided the results of the qualitative analysis of the open-ended cadet responses on the Moral Experience Questionnaire (MEQ). The second section was divided into seven parts. The first part reported the demographic data relevant to the MEQ administration. The next six parts provided analyses of one closed-ended and five open-ended MEQ questions.

An enlightened view of the cadet perception of moral judgment growth at the Academy arose. The honor code system, peer and faculty interaction, the Philosophy 310 core course, reflection, leadership/decision responsibility, social interaction, discussion, and role-modeling all emerged as positive events/relationships in cadet moral judgment development. The restrictive Academy environment, peer pressure, poor role modeling, and institutional dogma emerged as key events/relationships that had a negative impact on cadet moral judgment growth.

The next chapter provides further discussion of the research results in the context of the research literature. Further insight into the significance and

meaning of the research will be provided. Additionally, a discussion of the generalizability and limitations of the study will be incorporated. Finally, suggestions for further research in the field will be included.

CHAPTER 5

CONCLUSION

The purpose of this chapter is to provide further discussion of the results in the context of the moral judgment literature. In order to discuss the relevance of the research findings and provide suggestions for further research, this chapter is divided into eight sections. The first section restates the relevance of this study to the field of moral judgment research and the Air Force Academy character development program. The second section explains the purpose of the study. The third section describes the research procedures utilized. The fourth section discusses the sample characteristics. The fifth section discusses the findings for each research question with reference to the moral judgment research literature. The sixth section outlines the limitations of the present study. Recommendations for future research are provided in the seventh section. Finally, the eighth section provides a conclusion for this study.

Introduction

Since its inception in colonial America, higher education in the United States has had a role in the moral development of its students. Early colleges

included moral philosophy courses as capstone requirements for graduating seniors. In recent years, higher education has experienced a renewed focus on issues related to the moral and ethical development of students. Many institutions are revisiting their role in the moral development of students.

Starting with its first graduating class in 1959, the Air Force Academy has attempted to produce graduates with the knowledge and character to be productive citizens. Throughout its history, USAFA has maintained a primary mission focus on the character development of its students. The philosophy of USAFA character development prior to 1993 utilized a balanced program of military, academic, and athletic activities under an institutional honor code where character was thought to be a natural by-product. By 1993, it became evident to Academy officials that the basic character values of incoming students did not meet expectations (Thomas, 1993). USAFA officials worried that incoming cadets did not have a clear or common foundation of moral and ethical values--values functionally required of Air Force officers. In recognition of this perceived problem, the Academy created the Center for Character Development to oversee the character development program for cadets and have a more direct and programmatic impact on their moral development.

The ability to reason through moral/ethical issues was identified as an important component of the USAFA Character Development Program during a 1993 Gazette Telegraph interview with then Commandant of Cadets General Patrick Gamble (Thomas, 1993). General Gamble indicated that the Academy

intended to break character development into its lowest common denominators and influence those denominators over the four years of Academy attendance.

Scholars of moral development research have indicated that there is an urgent need for descriptions and evaluations of character education programs that are currently in schools" (Kuhmerker, 1995, p.3). Kuhmerker, in recognition of the influx of professed character education programs being touted by higher education institutions, called for empirical studies to analyze the programs. Additionally, Kuhmerker also recognized the military's initiative and leadership in the area of character education programs. She called for further inquiry into moral education in the military training environment with specific interest in the values the military was trying to inculcate in recruits--suggesting research be conducted to reveal how recruits interpret the values training they receive.

As an institution, USAFA believes that a focused and integrated character program contributes to the development of officer candidates. The philosophy holds that given the right environment, cadets will develop an understanding of the moral values expected in the military profession. According to USAFA, "Cadets arrive at the institution at a time of their lives when they are naturally interested in questions and values...although they may not possess professional military character when they arrive here, the right institutional environment will help them develop it" (USAFA Center for Character Development, 1994, p. 2).

Utilizing the works of Thomas Lickona (1991), the Academy defined good character as having three interrelated parts: moral knowing, moral feeling, and

moral behavior (USAFA Center for Character Development, 1994, p. 17).

USAFA intends to graduate officers who can judge what is right, care deeply about what is right, and then do what they believe to be right. The philosophy calls for the interrelationship of the cognitive component of moral knowing, the affective component of moral feeling, and the behavioral component of moral action. Good character was thought to be present when these three components worked together to do the right thing for the right reason (USAFA Center for Character Development, 1994, p. 21).

This research focused specifically on the cognitive component identified through moral knowing which incorporated the moral reasoning/judgment research construct. Moral judgment is a construct that characterizes the reasoning process by which subjects determine that one course of action is morally right and another course of action is morally wrong (Rest, Thoma, Narvaez, and Bebeau, 1997a). This construct is based on Kohlberg's (1969) stages of moral development which developmentally explain what "reasoning" a subject uses in his/her moral outlook.

Research on moral development, and moral judgment in particular, has advanced in the last forty years. Extensive theoretical and practical contributions have been made by Lawrence Kohlberg and James Rest. Kohlberg (1958, 1969, 1976, 1981, and 1984) proposed a six stage theory of moral development. Each stage represented a distinct foundational ideology as a support structure for moral decision-making. The consideration and weight that a subject gave to

different issues in his/her decision indicated which foundational stage of moral development he/she occupied.

Kohlberg's theory included three levels consisting of a total of six developmental stages (see Table 1 on page 34). Each stage represented a qualitatively distinct orientation toward moral reasoning. The first level denoted preconventional reasoning where societal expectations remained external to the individual. At the conventional level, the individual recognized rules, obligations, and expectations as being part of the self. Upon entering the postconventional or principled level of moral reasoning, an individual extracted the general principles of freedom, equality, and human rights from the laws and norms (Kuhmerker, 1991). Instead of following the rules or norms of a specific society or group, the individual recognizes the more general principles governing all of humanity.

A slightly different interpretation of Kohlberg's theory was professed by James Rest (1974, 1976, 1979, and 1986). While Rest supported Kohlberg's model, he argued that an individual's moral reasoning represented a collection of moral considerations from a cross-section of the moral stages. An individual in a particular stage used moral justifications from the present stage and a degree of considerations from lower stages--Kohlberg argued that a person's reasoning represented a single moral stage of development. For Rest, moral judgment was a distribution of stage scores which indicated the amount of consideration a person gave to a particular stage for a particular moral dilemma (Shaver, 1984).

Rest (1979, 1986) built upon Kohlberg's earlier model to profess a Four-Component Model of moral judgment that went beyond the cognitive construct of moral reasoning to account for other cognitive-affective interactions in moral action. Rest's model included the importance of interaction between moral feelings, reasoning, and behavior.

Of importance to this study was Rest's second component concerning moral judgment (Rest, 1986). This component closely reflected the body of research advanced by Kohlberg concerning moral reasoning development. For an individual to act morally, he/she had to be able to reason through moral issues. Rest (1974) designed the Defining Issues Test (DIT) as an objective measure of moral reasoning. The DIT has been utilized in research based on its strong reliability and validity. Additionally, the objective instrument is relatively easy to administer and score.

It should be apparent to the reader that there are similar moral knowing/reasoning/judgment components in Rest's model and the character development program at the USAF Academy (outlined in Chapter 1). The Academy's Character Development program focused on moral feeling, moral knowing, and moral behavior. The combination of Rest's second component on moral judgment and his third component on moral choice mirror USAFA's final component of the character development program, moral knowing. This study focused on USAFA's moral knowing component paralleling Rest's moral judgment and moral choice components.

Many more researchers have applied Kohlberg's and Rest's theories to the college environment in order to investigate moral judgment development and its relationship to selected research variables. Chapter 2 presented the state of the literature concerning the demographic variables selected for this study. The variables selected for inclusion in this study included gender, geographic region, age, education, educational environments, grade point average, military performance average, parental/sibling influence, leadership roles, entry waiver, prior military service history, preparatory school attendance, subject attrition, and longitudinal change in moral judgment. Additionally, an experiential questionnaire was incorporated to obtain subject perceptions of important events and relationships.

Purpose

The Air Force Academy's own recognition of the need to assess the many components of its character development program, the calls for research of military character education programs by scholars in the field of moral development, and the lack of current moral reasoning research relevant to the Air Force Academy created the need for further investigation. This study was designed to support analysis of the moral reasoning component of the Academy's Character Development program and the relationship of selected demographic variables to cadet moral judgment. The Defining Issues Test was utilized based on its validity and reliability as an instrument measuring the

construct of moral reasoning. Additionally, the Defining Issues Test was selected as a follow-up instrument based on USAFA's utilization of the instrument with Class of 1999 cadets during initial data collection.

A collection of demographic, experiential and affective variables have been researched in relationship to moral reasoning over the past thirty years. A literature review of the moral judgment construct indicated that there are large numbers of demographic variables and experiences associated with moral judgment development during the college years. The current state of empirical evidence concerning selected demographic variables and experiences indicated that further research was necessary with relationship to moral judgment, especially in the military academy environment.

The moral reasoning literature indicated that disagreement still exists concerning many variables commonly associated with moral judgment development. The literature review also provided the justification for the selection of certain demographic variables and college experiences for further research at USAFA.

The limitations associated with earlier studies (Bridges and Priest, 1983 and Rice, 1986), the more recent changes in the deliberate character development program, and the ongoing debate associated with variables in moral development research, indicated that investigation of the current state of cadet moral development, and college student moral development in general, was required. No extensive empirical studies have been published which

investigate cadet moral development under current institutional conditions.

Comprehensive longitudinal research on student moral reasoning would provide character development insight to Academy officials and contribute to the ongoing body of research associated with the influence of college on student moral judgment development.

The overall objective of this study was to provide empirical research on the moral reasoning component of the Academy character development program. The research was divided into three distinct portions utilizing the Defining Issues Test (DIT) and the open-ended Moral Experience Questionnaire (MEQ) for data collection. The first part of the study utilized the three story version of the DIT to investigate whether longitudinal changes occurred in the moral judgment scores of cadets between entry into the Air Force Academy and the spring semester of their senior year. The second portion of the study utilized DIT scores to investigate whether group differences and/or correlation existed between DIT scores and selected demographic variables of importance to the Air Force Academy and the domain of moral judgment research. The final portion of the study employed the Moral Experience Questionnaire to obtain cadet perspectives on the types of experiences that had symbolic relevance to his/her own individual moral judgment development.

The thirteen research questions for this study were derived from the literature concerning college student, moral judgment development and the unique mission objectives of the Air Force Academy. The research questions

represent the demographic variables, experiences, and Academy populations identified for inclusion in the present study.

1. Are there longitudinal changes in cadet moral judgment from entry into USAFA to completion of the 4th year (Class of 1999 cohort) of Academy education? This question will investigate changes in overall P-score, N2-score, or stage scores using the DIT.
2. Is there a relationship between moral judgment at entry (entry DIT) and completion/non-completion of 4 years of Academy education (Class of 1999) with relationship to Honor Violation (lying, cheating, stealing, tolerating), Conduct, Academic, Athletic or Self-Initiated Elimination (SIE) dismissals?
3. Can differences in moral judgment development be distinguished by the age of the cadet for the Class of 1999?
4. Can differences in moral judgment development be distinguished by U.S. region of parental domicile for cadets in the Class of 1999?
5. Can differences in moral judgment development be distinguished by Prep School attendance status for cadets in the Class of 1999?
6. Can differences in moral judgment development be distinguished by cadet gender for students in the Class of 1999?
7. Can differences in moral judgment development be distinguished by cadet MPA for students in the Class of 1999?
8. Can differences in moral judgment development be distinguished by cadet GPA for students in the Class of 1999?
9. Can differences in moral judgment development be distinguished by military academy graduation history of the cadet's parents or siblings for Class of 1999 members?
10. Can differences in moral judgment development be distinguished by entrance waiver status for cadets in the Class of 1999?

11. Can differences in moral judgment development be distinguished by a cadet's prior military service status for students in the Class of 1999?

12. Are there differences in senior class (Class of 1999) cadet moral reasoning (DIT scores) based on senior class, leadership position status/experience?

13. What USAFA and non-USAFA experiences do cadets in the Class of 1999 cohort identify as contributing to or restricting their moral judgment development during the four years of Academy attendance?

Procedure

The methods for this study included paper and pencil completion of the three dilemma version of the DIT and MEQ by a large sample of cadets from the Class of 1999. To facilitate access to as large a follow-up sample as possible and to ensure similar testing conditions between incoming and follow-up data collection, the researcher pursued administration of the research instruments through a senior-level core academic course. The researcher obtained follow-up access to Class of 1999 cadets through the MAS-440 and MAS-472 courses. Access to the Class of 1999 cadets through the core courses was important for a number of reasons. First, senior-level core courses represented a random sample and assignment of Class of 1999 cadets. The USAFA Registrar randomly selects and assigns cadets to senior-level core courses for the Fall and Spring semesters. Second, the researcher wanted to match testing conditions between the entry and follow-up data collection. Academic lectinars were utilized for group administration of instruments during the summer 1995 data

collection. Utilizing a core course academic period enabled the researcher to replicate the testing conditions in the same lectinars during a fifty-minute class period. Finally, the core courses provided access to 41 percent of the remaining Class of 1999 population (398 of 966 cadets) in their final semester at USAFA.

The readministration of the DIT to the cadet cohort during the spring 1999 semester provided follow-up moral judgment scores on the cadets. This second administration provided longitudinal, correlation, and group-comparison opportunities for analysis.

Institutional data representing the key variables identified for this research were maintained in the Academy archives and were retrieved through electronic means. Information maintained on the individual students included incoming DIT raw scores, demographic data, academic information, military performance scores, and conduct and honor violations.

While the DIT provides quantitative information concerning the qualitative levels of moral judgment, research in the Academy environment would be incomplete without inclusion of cadet input concerning Academy experiences. As a result, the MEQ was administered along with the DIT. Students could provide input concerning the specific types of Academy experiences they perceive contributed to their moral development.

Sample

The population of interest for this research was the USAFA Class of 1999. A near-census of all incoming Class of 1999 cadets was conducted during the summer of 1995 by the USAFA Office of Institutional Research using the Defining Issues Test. The Class of 1999 entered the Academy with a population of 1,340 cadets. The initial (entry) administration of the DIT to the Class of 1999 resulted in 1,299 of 1,340 cadets completing the instrument for a 96.9 percent participation rate. At the time of the follow-up data collection, the Class of 1999 had a current enrollment of 966 cadets. The age of cadets at entry into USAFA is restricted to 17 to 21 years old, therefore, cadets in their senior year at the Academy range in age from 20 to 25 years old.

Due to the longitudinal nature and multiple variables of interest for this research (gender, geographic region of parental domicile, waiver status, USAFA graduate status of parents, prior military service, and age), a significant sample of cadets in the Class of 1999 was intended for follow-up administration. Nearly all Class of 1999 cadets completed the DIT at entry into USAFA (1,299 of 1,340 cadets). The raw incoming DIT data on the 1,299 cadets was obtained through Academy archives.

With 966 Class of 1999 cadets remaining at USAFA in 1999, a sampling frame of 398 subjects was available through the MAS-440 and MAS-472 courses (41.2 percent). With the follow-up sampling frame of 398 cadets, 327 cadets completed the DIT (82.2%) and 310 completed the MEQ (77.9%). Follow-up

participation from the cadets enrolled in MAS-440 equated to 312 (out of 353 for 88.3% participation) and 15 cadets enrolled in MAS-472 (out of 45 for 33.3% participation). Adequate power for statistical inference concerning the variables of interest was available from the obtained sample from the Class of 1999 (n=327 out of a Class of 1999 remaining population of 966 for a sampling of 33.9%). Of the 327 subjects participating in the follow-up administration, 273 subjects had usable DIT scores. Matched pairs of incoming and follow-up DIT scores were obtained on 201 subjects for the Class of 1999.

The primary respondents for this research were the USAFA cadets in the Class of 1999 representing the senior class. The researcher administered the DIT and MEQ to a sample of cadets in the Class of 1999 through the MAS-440 and MAS-472 academic core courses. The majority of cadet subjects utilized for this study were students in the MAS-440 core course during the spring 1999 semester. Students were randomly assigned to the core course by the USAFA Registrar and represent a cross-section of all variables associated with their cadet cohort. Forty-five Class of 1999 cadets enrolled in the MAS-472 course were also included in the study. These cadets were unique from other Class of 1999 subjects because they filled formal leadership positions/roles as squadron, group, or wing commanders. Cadet commanders complete MAS-472 as a core substitute to MAS-440. As a combined sample, the MAS-440/MAS-472 cohort is representative of the greater Class of 1999 population at USAFA.

Independently, the MAS-440 and MAS-472 samples enabled to researcher to

make group distinctions between senior cadets in command/leadership positions and senior cadets not in command/leadership positions.

Of the 1,299 subjects that completed the entry DIT in 1995, 319 (24.5 percent) were purged from the sample for failing the consistency check or having an unacceptable M-score. The final number of usable incoming DIT scores for statistical analysis was 980 subjects.

Of the 327 subjects that completed the follow-up DIT in 1999, 54 (16.5 percent) were purged from the sample for failing the consistency check or having an unacceptable M-score. The final number of usable follow-up DIT scores for statistical analysis was 273 subjects.

Of the 327 subjects that completed the follow-up DIT for the paired-samples, 126 were purged for failing the consistency check (entry or follow-up DIT), having an unacceptable M-score (entry or follow-up DIT), or unavailability on incoming DIT data on the subject. The final number of usable pairs of matched DIT scores (entry and follow-up) for statistical analysis were 201 subjects.

Discussion

This section provides discussion of the findings and implications for each research question with reference to the moral judgment research literature. The section is divided into three main parts. Initial discussion focuses on the longitudinal portion of the study related to research question 1. The next

segment discusses the group comparison and correlation findings of the demographic variables covered by research questions 2 through 12. The final area discusses the qualitative research findings associated with the MEQ administration related to research question 13.

For each of the subsections outlined above, the relevant research questions will be presented. Following the restatement of each research question, discussion will focus on the observations associated with this study and the implications for moral judgment research.

Longitudinal Findings

Rest (1979) indicated that longitudinal studies provided the best evidence of changes in individual moral development over time. Following individuals over time and retesting them with the DIT at periodic intervals provided the most direct evidence of whether there was change in moral judgment (Rest, 1979). Wood (1993) held that longitudinal studies served to further illuminate the relationship between moral development and institutional programs such as the Academy's academic and character development programs.

Rest indicated that testing effects, sampling bias, and generational effects must all be considered as possible contaminants that might interfere with the generalizability of longitudinal results. Testing effects were mitigated in the study by replicating testing locations and data collection procedures. Additionally, a 3.5 year period between testings prevented subject familiarization with the

instrument. Sampling bias was a concern when considering that some 33% of incoming cadets leave the institution prior to graduation. Analysis of entry DIT scores for the entire class indicated there were no statistically significant differences between cadets remaining at the institution and cadets that left the institution. Finally, generational effects were a significant reason for this updated study of Academy cadet moral judgment. Generational influences remain a concern when comparing the results of this study to other studies at military academies or colleges.

This longitudinal study utilized the incoming DIT score for each cadet in the Class of 1999. Some 97 percent of the cadets in the Class of 1999 were administered the DIT in 1995 during basic cadet training summer. Raw DIT selections for each subject were maintained in USAFA Institutional Research databases and were made available to the researcher for analysis. A follow-up administration of the DIT to a random sample of Class of 1999 subjects was conducted during the spring 1999 semester. This follow-up administration facilitated longitudinal analysis of changes in cadet moral judgment. Entry to follow-up data on the class of 1999 represents a four-year longitudinal study.

Research question 1 inquired if there were longitudinal changes in cadet moral judgment from entry into USAFA to completion of the 4th year (Class of 1999 cohort) of Academy education? This question investigated changes in overall P-score, N2-score, and stage scores using the DIT.

Statistical analyses utilized a paired-samples t-test design of entry and follow-up DIT scores (n=201). The statistical analyses indicated Class of 1999 cadets increased their usage of principled moral reasoning during their attendance at USAFA. Utilizing matched-pair t-tests of incoming and follow-up DIT scores, statistically significant longitudinal changes were realized for the DIT P-index, N2-index, and all stage scores.

Longitudinal gains were observed in P-score, N2-score, stage 2 score, stage 5A score, and stage 5B score. As a group, Class of 1999 cadets increased in P-score by 10.78 points, N2-score by 7.10 points, stage 2 score by 0.65 points, stage 5A score by 6.10 points, and stage 5B score by 1.06 points. All gains were statistically significant at the .05 level. The effect sizes were large for the gains in P-score (0.86), N2-score (0.80), and stage 5A score (0.94). Stage 5B score showed moderate gain with an effect size of 0.51. Stage 2 score indicated a small gain with an effect size of 0.24. The increases in P-score and N2-scores for the matched-pairs sample signaled an increase in cadet principled moral reasoning during attendance at the Academy.

Longitudinal losses were observed in stage 3 scores, stage 4 scores, and stage 6 scores. As a group, Class of 1999 cadets decreased in stage 3 score by 4.20 points, stage 4 score by 1.74 points, stage 6 score by 0.80 points. All losses were statistically significant at the .05 level. The effect size was moderate for the stage 3 score loss (0.59). Small effect sizes were observed for stage 4 score (0.24) and stage 6 score (0.21) losses.

Case-by-case examination of the 201 matched-pairs of entry and follow-up DIT scores provided additional information. James Rest (1990) provided insight into standard error of measurement change scores to determine if developmental change was significant. In order to avoid interpreting measurement error as significant change in moral reasoning, Rest determined the average margins of measurement error for each moral reasoning stage and scoring index. He established change score gains indicating whether meaningful longitudinal change occurred. According to Rest, meaningful change occurs on the three-story DIT when differences in longitudinal testings exceed 3.8 points for stage 2, 5.2 points for stage 3, 5.2 points for stage 4, 5.0 points for stage 5A, 2.1 points for stage 5B, 2.6 points for stage 6, and 9.7 percentage points for P-score (Rest, 1990, p. 5.3). Since N2-score is a relatively new index in DIT research, no published standard error of measurement was available. Discussions with Rest's associates at the University of Minnesota indicated that a standard error of measurement of 9.7 points should be utilized for N2-score (Mitchell, personal communication, March 26, 1999).

Table 64 provides closer insight into individual change on DIT indexes and stage scores. The table indicates the number and percentage of cadets that increased, remained unchanged, or decreased in the various DIT index and stage scores.

Table 64: Individual Change in Cadet DIT Scores (n=201)

| <u>DIT Score (SEM)</u> | <u>Gain</u> | | <u>Unchanged</u> | | <u>Decline</u> | |
|------------------------|-------------|----------|------------------|----------|----------------|----------|
| | <u>#</u> | <u>%</u> | <u>#</u> | <u>%</u> | <u>#</u> | <u>%</u> |
| P-score (9.7) | 114 | 56.7% | 52 | 25.9% | 35 | 17.4% |
| N2-score (9.7) | 88 | 43.8% | 96 | 47.8% | 17 | 8.4% |
| Stage 2 score (3.8) | 44 | 22.0% | 126 | 63.0% | 30 | 15.0% |
| Stage 3 score (5.2) | 31 | 15.5% | 75 | 37.5% | 94 | 47.0% |
| Stage 4 score (5.2) | 50 | 25.0% | 70 | 35.0% | 80 | 40.0% |
| Stage 5A score (5.0) | 111 | 55.5% | 64 | 32.0% | 25 | 12.5% |
| Stage 5B score (2.1) | 50 | 25.0% | 131 | 65.5% | 19 | 9.5% |
| Stage 6 score (2.6) | 38 | 19.0% | 94 | 47.0% | 68 | 34.0% |

Table 64 indicates that 56.7% of the Class of 1999 cadets in the matched-pairs sample increased in the P-score index of principled moral reasoning. A smaller percentage (26%) indicated no change while 17% of the cadets declined in P-score. The new index of principled moral reasoning (N2-score) revealed fewer cadets with increased propensity for principled reasoning (43.8%). The new index also revealed that fewer cadets (8.4%) declined in principled reasoning with almost half (47.8%) remaining unchanged over 3.5 years.

In comparing the P and N2 indexes of principled moral reasoning, it appeared that P-score provided very similar longitudinal trends. P-score showed higher individual gains in principled reasoning than N2-score, but also reflected

twice as many cadets declining in principled reasoning than N2-score. Both P-score and N2-score indicated large effect sizes at 0.86 and 0.80 respectively. Additionally the two indexes had similar t-values (7.75 for P-score and 7.85 for N2-score).

More important than the comparisons between the P and N2 indexes are the general trends indicated by the indexes collectively. Both indexes clearly indicated that most cadets in the USAFA Class of 1999 increased in their usage of principled moral reasoning over the 3.5 years of Academy attendance. Many of the cadets in the "unchanged" categories showed gains in principled moral reasoning, however, the gains were within the sampling error range covered by the 9.7 point standard error of measurement.

Rest argued that an individual's moral reasoning represented a collection of moral considerations from a cross-section of the moral stages. An individual in a particular stage used moral justifications from the present stage and a degree of considerations from lower stages. Moral judgment was a distribution of stage scores, which indicated the amount of consideration a person gave to a particular stage for a particular moral dilemma.

As an individual increases his/her usage of principled moral reasoning over time, their distribution of stage scores should also reflect increases in higher stage scores at the expense of lower stage scores. The matched-pairs results from the Academy sample reflected a traditional shift from lower stage reasoning to higher stage reasoning. Analysis of Class of 1999 stage scores indicated that

the group increased in stage 5A and stage 5B reasoning at the same time that it reduced its stage 3 and stage 4 reasoning. This shift from lower stage reasoning to higher stage reasoning is expected when overall gains in principled moral reasoning are observed.

Unique to the Class of 1999 was the small increase in lower stage 2 reasoning and small decrease in stage 6 reasoning. While these changes were statistically significant, their effect sizes were small. One would have expected that stage 2 scores would have decreased while stage 6 scores increased. These unexpected results might be attributed to the rigid law and order Academy environment.

Comparison of this study with other longitudinal studies in the college environment yields interesting findings. This study found similar results to Shaver's (1984) four-year longitudinal research at a conservative religious college. Shaver (1984) found that almost half of the subjects involved in a four-year collegiate study increased in principled moral reasoning where less than 10 percent decreased in their usage of principled moral reasoning. In the present study 57% of the cadets increased in P-score and 44% increased in N2-score (both indexes of principled moral reasoning). Additionally, only 17% decreased in P-score and even fewer (8%) decreased in N2-score.

Mentkowski and Strait (1983), Biggs and Barnett (1981), and Spickelmier (1983) also identified statistically significant gains in principled moral reasoning from entry into the institution to follow-up four years later. Mentkowski and Strait

reported entry P-score of 39.2 and exit P-score of 48.9 for their college sample. Biggs and Barnett reported entry P-score of 38.6 and exit P-score of 48.0 for their college sample. Spickelmier reported entry P-score of 42.5 and follow-up P-score of 48.1 for his college sample. The four-year USAFA study also identified gains, but identified lower entry and exit P-scores for the cadet sample.

Bridges and Priest (1983) conducted a longitudinal study of United States Military Academy (USMA) cadets in the Class of 1981. The results, like the studies conducted in civilian institutions, indicated that the cadets had statistically significant gains in moral reasoning over the four years--from an entry mean P-score of 36 to a graduation P-score of 43.

Comparing the findings of this study to the Bridges and Priest study provides interesting results. While the USMA sample showed principled moral reasoning gains of seven percentage points, the current USAFA sample reflected larger gains. The USAFA sample entered with a P-score of 28 and exited with a P-score of 39. The comparison indicates that USAFA cadets experiences larger gains in P-score during their attendance (11 percentage points versus 7 percentage points for the USMA sample). Interestingly, however, the USAFA sample entered and exited with lower entry and exit P-scores than the USMA sample. These differences in entry and exit P-scores may be attributed to the generational effects that Rest described.

Table 65 provides a comparison of the longitudinal results of the USAFA study with other four-year longitudinal studies conducted in the college

environment (Rest and Narvaez, 1994, p.32). The results of this study compared favorably with the other studies identified--assuming the other studies were conducted using representative samples.

Table 65: Longitudinal Change in College Student P-score

| Institution | Entry | Follow-up | N | Δ | SD | Effect Size |
|--|-------|-----------|-----|----------|-------|-------------|
| USAFA ^a | 28.3 | 39.1 | 201 | 10.8 | 19.72 | .86 |
| USMA ^b | 34.4 | 43.3 | 104 | 8.9 | 11.83 | .76 |
| Univ of California, Irvine ^c | 36.9 | 48.1 | 95 | 11.2 | 13.26 | .84 |
| Columbia Bible College ^d | 33.4 | 33.2 | 54 | -0.2 | 12.73 | .02 |
| Wheaton ^e | 41.5 | 52.4 | 44 | 10.9 | 17.22 | .63 |
| Bethel ^f | 37.3 | 47.7 | 28 | 10.4 | 14.39 | .72 |
| Alverno ^g | 35.6 | 47.4 | 70 | 11.8 | 11.53 | 1.02 |
| Houghton, Messiah, and Weaton ^h | 37.2 | 46.8 | 74 | 9.6 | 10.58 | .91 |

^aLuedtke, 1999

^bBridges and Priest, 1983

^cLoxley and Whiteley, 1986

^dShaver, 1987

^eShaver, 1987

^fMcNeel, 1991

^gMentkowski and Strait, 1983

^hBurwell, Butman, and Van Wicklin, 1992

Table 65 reflected some similarities and differences when comparing the present study to the others. The raw change in P-score over four years and the effect size of the USAFA study were comparable to the other college studies. The USAFA sample reflected three distinct departures from the other studies identified. The USAFA sample entered the institution with substantially lower

DIT P-scores than the other samples of entering students. Additionally, the USAFA sample exited with substantially lower DIT P-scores than the other samples of graduating students. A much larger standard deviation was observed with the present study than the earlier studies identified in Table 65.

It appears that unique generational effects or population characteristics may have an influence on cadet moral judgment. USAFA cadets may represent a unique college population at entry into the institution. It is possible that entering cadets represent a unique subgroup of the greater college-aged population. A conservative social milieu, reflective of lower DIT P-scores and commonly associated with military service, may be shared by entering Class of 1999 cadets.

Although Class of 1999 cadets increased in principled moral reasoning at a rate comparable to other college and university samples, they completed the college experience with lower P-scores than the other samples. Again, these lower P-scores may be attributed to unique generational effects not identified with this study. Additionally, a conservative social philosophy may be present and influential during the four years of Academy attendance.

Rest and Narvaez (1997) suggested that it was desirable to describe groups in more detail using DIT index and stage scores. They recommended profiling groups by their index and stage scores to facilitate comparisons with other groups. Table 66 provides stage and index profile comparisons between the present study and a generalized college cohort reported by Rest (1990).

Table 66: DIT Stage and Index Score Profile Comparisons

| Group | | 2 | 3 | 4 | 5A | 5B | 6 | P | N2 |
|-----------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|
| College ^a | M | 3.05 | 8.60 | 17.01 | 15.81 | 5.20 | 4.89 | 43.19 | ----- |
| | S | 2.81 | 5.14 | 8.07 | 6.31 | 3.40 | 3.34 | 14.32 | ----- |
| McNeel 1 ^b | M | ----- | ----- | ----- | ----- | ----- | ----- | 35.80 | 39.23 |
| | S | ----- | ----- | ----- | ----- | ----- | ----- | 11.59 | 11.74 |
| McNeel 2 ^c | M | ----- | ----- | ----- | ----- | ----- | ----- | 45.81 | 49.18 |
| | S | ----- | ----- | ----- | ----- | ----- | ----- | 13.58 | 12.18 |
| USAFA 1 ^d | M | 1.73 | 15.32 | 21.57 | 12.27 | 0.84 | 3.91 | 28.27 | 35.28 |
| | S | 2.69 | 7.12 | 7.25 | 6.49 | 2.08 | 3.71 | 12.48 | 8.93 |
| USAFA 2 ^e | M | 2.38 | 11.14 | 19.67 | 18.42 | 1.92 | 3.09 | 39.05 | 42.38 |
| | S | 3.47 | 7.00 | 9.00 | 8.20 | 2.65 | 3.57 | 15.81 | 10.98 |

(M): Mean

(S): Standard Deviation

^aGeneral college sample (n=270) as reported by Rest (1990, p. 6.2).

^bRest, Thoma, Narvaez, and Bebeau (1997b, p. 502) reported college freshman N2-scores using McNeel's (1994) study (n=263).

^cRest, Thoma, Narvaez, and Bebeau (1997b, p. 502) reported college senior N2-scores using McNeel's (1994) study (n=263).

^dUSAFA Class of 1999 at entry using matched-pairs sample (n=200).

^eUSAFA Class of 1999 at follow-up using matched-pairs sample (n=201).

Reviewing Table 66 indicated bi-directional differences between the two USAFA profiles and the general college profile reported by Rest. Class of 1999 USAFA cadets utilized less stage 2, stage 5B, stage 6, and P-score reasoning than Rest's sample. Class of 1999 USAFA cadets utilized more stage 3, stage 4, and stage 5A reasoning than Rest's sample. The N2-index represents a new index in DIT research, consequently, no comparison scores for a general college

population were available using Rest's 1990 data. Comparison of USAFA entry and follow-up N2-scores with McNeel (1994) yielded smaller gains for the USAFA sample. McNeel's sample showed a larger gain in N2-score over four years. Additionally, McNeel's sample had higher entry and follow-up N2-scores than the USAFA sample.

No other longitudinal studies of USAFA cadet DIT scores were previously conducted which makes it difficult to benchmark these results against other cadet classes. While no other longitudinal USAFA DIT studies exist, Rice (1986) completed a cross-sectional DIT study using a limited number of USAFA cadets from the classes of 1985 through 1988. For the purposes of his study, Rice utilized a P-score lower range cut-off of 42.0 to denote principled moral reasoning. He then divided freshman through senior cadet P-scores by class and two levels of P-score (below 42.0 and 42.0 and above). The purpose for the categorization of P-scores was to see which percentage of each class operated at a principled level of moral judgment. Rice (1986, pgs. 172-173) concluded that the percentage of subjects who achieved a P-score index of 42.0 or higher increased with class level. In his study, 65.5 percent of the seniors had P-scores of 42.0 or higher.

Utilizing Rice's P-score cut-off of 42.0 to denote principled moral reasoning, the Class of 1999 entry (n=980), follow-up (n=273), and matched-pairs (n=201) DIT P-scores were analyzed to facilitate comparisons. At entry, 152/980 (15.5%) Class of 1999 cadets had P-scores at or above 42.0. At follow-

up, 119/273 (43.6%) cadets had P-scores at or above 42.0. The matched-pairs sample (n=201) of entry and follow-up Class of 1999 P-scores yielded similar percentages. In the matched-pairs sample, 34/201 (16.9%) had entry P-scores at/above 42.0 and 91/201 (45.3%) had follow-up P-scores at/above 42.0. These findings supported Rice's (1986) conclusions that utilization of principled moral reasoning increased with year of Academy education. Significantly different, however, was that 65.5 percent of the Class of 1985 seniors obtained P-scores at/above 42.0 while only 43.6-45.3 percent of the Class of 1999 seniors had P-scores at/above 42.0.

The similar growth trends between this study and Rice (1986) indicated that the four years of Academy attendance do coincide with a growth trend in principled moral judgment. This study was not able to determine whether this development was due to the general college environment or specific Academy programs. What remains interesting and unclear at this point is the lower mean P-score for the Class of 1999 versus Rice (1986) and the other longitudinal college samples described earlier.

An additional concern was the lower percentage of Class of 1999 cadets obtaining P-scores above 42.0 when compared to Rice's results of 65.5 percent for the Class of 1985. Did the lower trends indicate historical/generational differences between the classes, methodological differences between the studies, or was it an indication that the current Academy character development program influenced cadets toward conventional moral judgment?

Overall, the longitudinal portion of this study revealed significant gains in principled moral reasoning over the four years of Academy attendance for the Class of 1999. While the raw gains in principled moral reasoning were comparable to other four year longitudinal studies in the college environment, the entry and graduating principled moral reasoning scores of USAFA cadets were lower than comparable samples. These lower entry and follow-up P-scores could be an indication of generational influences on the Class of 1999. Additionally, the lower entry and follow-up P-scores could be indicative of a conservative milieu associated with the entering population, which is then supported by the Academy environment over the four years of attendance.

Group Comparison and Correlation of Research Variables

A large body of demographic, experiential and affective variables have been researched in relationship to moral reasoning over the past 30 years. This section discusses the findings of research questions 2 through 12 and their focus on selected demographic variables and experiences in moral judgment development.

No significant group differences were observed for research questions 2 (attrition code), 3 (age), and 4 (geographic region). Analysis of research question 5 (preparatory school status) indicated non-prep school cadets scored higher as a group on entry DIT N2-score than prep school cadets. No prep school status group differences were observed on entry DIT P-score, follow-up

DIT P-score, or follow-up DIT N2-score.

Analysis of research question 6 (gender) utilized independent samples t-tests. Results indicated no significant gender differences on entry DIT P-score or N2-score. Significant gender differences were observed on follow-up DIT P-score and N2-score with females scoring higher than males.

Correlation was utilized to assess research questions 7 (MPA) and 8 (GPA). No significant relationships existed between MPA and DIT P-score/N2-score. A statistically significant correlation existed between DIT N2-score and GPA, however, no relationship existed between DIT P-score and GPA.

Analysis of research question 9 (parent and sibling Academy graduation status) revealed no significant group differences. Research question 10 (entry waiver status) indicated that non-entry waiver cadets as a group scored higher on entry DIT N2-score, follow-up P-score, and follow-up N2-score than the entry waiver group of cadets. No significant group differences existed on entry P-score.

Research question 11 (prior military service status) indicated that non-prior service cadets scored higher as a group on entry P-score and N2-score than prior service cadets. No significant group differences existed on follow-up P-score or N2-score.

Research question 12 (leadership status) revealed that cadets in leadership positions scored higher as a group on follow-up N2-score than cadets not in leadership positions. No significant group differences existed on follow-up

P-score.

For the remainder of this section, the relevant research questions will be presented (questions 2-12). Following the restatement of each research question, discussion will focus on the observations associated with this study and the implications for moral judgment research.

Research Question 2 investigated whether there was a relationship between moral judgment at entry (entry DIT) and completion/non-completion of 4 years of Academy education (Class of 1999) with relationship to Honor Violation (lying, cheating, stealing, tolerating), Conduct, Academic, Athletic or Self-Initiated Elimination (SIE) dismissals?

Rest (1979) warned longitudinal researchers that sampling bias can affect the interpretation of results. When conducting longitudinal studies, researchers needed to understand that indications of gains in moral reasoning may be related to the attrition of lower scoring participants during the study. If subjects who scored lower on the initial DIT are more representative of individuals who did not complete the entire Academy program (and the follow-up DIT), then perceived increases in the group DIT means are more likely attributed to fewer low scoring subjects in the study.

In order to account for subject attrition during this research, institutional databases were utilized to identify cadets in the USAFA Class of 1999 who were disenrolled after the initial DIT testing and prior to the follow-up DIT administration. Academy databases identified each disenrolled cadet as well as

the reason for the disenrollment. Reasons included cadet self-initiated drop-out, conduct violations, military deficiency, academic deficiency, medical dismissal, church missions, turn-back to a following class, and honor code violations. The research focus on moral judgment investigated whether the incoming DIT scores of cadets that completed the USAFA program differed from the incoming DIT scores of cadets who were disenrolled from the Academy.

Utilizing the Class of 1999 entry DIT scores that passed the M-score and consistency checks (n=980), independent samples t-tests and ANOVA were employed to assess differences between cadets that left the institution and cadets that remained. Academy databases revealed that of the 980 entering cadets with good DIT scores, 698 cadets remained at the Academy through their senior year while 282 cadets departed.

Analysis of the data failed to identify statistically significant differences in entry P-scores or N2-scores utilizing t-tests and ANOVA. The attrition group of cadets had an entry P-score of 27.9 while the persist group had an entry P-score of 28.9. The small group difference in entry P-score was statistically non-significant. The attrition group of cadets had an entry N2-score of 34.8 while the persist group had an entry N2-score of 35.7. Again, small group difference in entry N2-score was statistically non-significant. Cadets that persisted at the Academy had similar entry DIT scores than cadets that departed from the Academy. Sampling bias, due to subject attrition, was discounted as a contributing factor in the longitudinal DIT score gains reported earlier in this

chapter.

Further investigation of P-score and N2-score group differences by attrition code failed to identify statistically significant results. ANOVA analysis of entry DIT scores indicated observed group differences but failed to identify statistically significant differences. While not statistically significant, the group of cadets that left the Academy for church missions had substantially lower entry DIT P and N2 scores than the other attrition groups or persist group. The church mission group (n=19) had an observed entry P-score of 21.0 while the other comparison groups ranged from 27.4 to 30.6. The church mission group (n=19) had an observed entry N2-score of 29.9 while the other comparison groups ranged from 34.2 to 36.4. Had the church group differences been statistically significant, it is likely that the group differences would have been attributed to the complex relationship with between church affiliation and DIT scores. Rest (1979, p. 119) indicated that "DIT scores may be high or low depending on the intellectual milieu of a particular church."

Research Question 3 investigated whether differences in moral judgment development could be distinguished by the age of the cadet for the Class of 1999?

From the beginning, moral reasoning research has been founded in the belief that it was a developmental theory in which an individual progressed in moral reasoning as he/she proceeded through various age/education stages in his/her life (Kohlberg, 1958; Piaget, 1932/1965). Rest (1979) argued that

evidence of change over time from less advanced forms of thinking to more advanced forms of thinking was functionally required for a cognitive-developmental construct to be considered legitimate. With Piaget, Kohlberg, and Rest clearly asserting that an individual's cognitive and moral reasoning developed over time (according to age and level of formal education), empirical support was necessary to support their claims.

Longitudinally, Rest (1986) reports a ten year study of over 100 subjects where general age-education-moral reasoning trends indicated upward movement on a correlated t-test (95 df) = -9.7, $p < .0001$. Further empirical research attempted to partial-out the unique relationship between educational level and moral reasoning (since age-education were confounded in most of the other studies). Dortzbach (1975) used an adult sample of subjects 25 to 74 years old to compare educational trends in relation to moral reasoning. Grouping by educational level produced the highest average DIT P-scores, versus grouping by age, suggesting that education was more highly correlated with moral reasoning than age. Coder (1975) found educational level significantly correlated with DIT P-score $r(81) = .25$, $p < .05$ using a sample of 87 adults ages 24-50. Crowder (1976) discovered similar results using 70 subjects age 18-59. Crowder found an education correlation of $r = .25$, $p < .05$. Few studies have contradicted these education trends and those that do were confined to educational environments that embraced a conservative milieu such as private, religiously-affiliated institutions (Quarry, 1997; Shaver, 1987).

Several studies attempted to provide more specific evidence of gains in moral reasoning by year of college attendance. Loxley and Whiteley (1986) discovered that that P-score gained 11.14 points from freshmen to senior with 37 percent of the gain occurring during the freshmen year. Mentkowski and Strait's (1983) study revealed that freshmen to senior P-score gains were 9.7 points with freshmen to sophomore gains accounting for 76 percent of the total gain. Studies confined to religiously affiliated colleges indicate less dramatic changes in moral reasoning by year in college (Quarry, 1997; Shaver, 1984 and 1987).

With some studies indicating significant shifts in moral reasoning by year of college education and others suggesting inconsistent development, this research sought to investigate change in moral reasoning for the Class of 1999 at the Academy. ANOVA analyses of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The ANOVA analyses attempted to differentiate group differences in entry and follow-up DIT P-scores and N2-scores by age at DIT administration. The ANOVA analysis enabled the researcher to investigate whether differences existed between the different age groupings of cadets. Six age-group distinctions were utilized at entry representing cadets 17 to 22 years old. Six age-group distinctions were utilized at follow-up representing cadets 20 to 25 years old.

The ANOVA analyses of entry and follow-up P-scores and N2-scores failed to identify statistically significant age-group differences. At entry, there were no statistically significant age-group differences between cadets aged 17 to

22 years old. At follow-up, there were no statistically significant age-group differences between cadets aged 20 to 25 years old. As a variable, age was not useful in differentiating differences in entry or follow-up DIT scores. The longitudinal results reported earlier in this chapter indicated that statistically significant gains were associated with the four years coinciding with Academy attendance. This study did not perform repeated class-year data collection with the DIT, consequently, individual class-year change in DIT scores could not be detected. Total freshmen to senior gains in DIT P-score for this study were comparable to the other college studies showing positive gain in P-score.

Research Question 4 inquired whether differences in moral judgment development could be distinguished by U.S. region of parental domicile for cadets in the Class of 1999?

Some tentative discussion in the literature has investigated differences in moral judgment based on geographic location within the United States. Quarry (1997) reported that geographic region was inconsistently related to moral reasoning and determined that geographic location of respondent's family residence had no relationship with DIT score in her limited study of a Christian Liberal Arts institution in Southern California. Rest (1979) reported that his analysis of cross-sectional studies containing 2,500 college subjects from around the country indicated that samples from the Southern United States had the lowest DIT scores (he suggested that this might be due to the conservative traditions associated with that part of the country). Guldhammer (1982) indicated

her sample of college students in the United States scored higher than foreign students. While little can be concluded from these studies, Rest (1979) suggested that more empirical studies on this issue would be of interest.

Although it represents a highly selective and unique population of college students, the Air Force Academy draws its student body from throughout the United States and its territories. Additional international cadets were admitted from allied nations.

ANOVA analyses of entry P-scores and N2-scores were utilized to assess this hypothesis. The ANOVA analyses attempted to differentiate group differences in entry DIT P-scores and N2-scores by geographic region based on the home location from which each cadet arrived at the Academy. The ANOVA analysis enabled the researcher to investigate whether differences existed between geographic region groupings of cadets. Six geographic region group distinctions for entering cadets were utilized for this analysis (see Figure 4 in Chapter 4).

The ANOVA analyses of entry P and N2 scores failed to identify statistically significant group differences. These results supported Quarry's (1997) study, which could not differential regional student differences at a conservative Christian college. This study could not replicate Rest's (1979) findings that students from the Southern United States had lower P-scores. Too few international cadets completed the entry DIT to draw conclusions or replicate Guldhammer's (1982) findings.

The inability to detect regional differences in entry P-score could be attributed to a number of reasons. One reason could be that differences by geographic region do not exist. Another possibility is that incoming cadets represented a unique population that shared common moral beliefs and that these shared beliefs discounted regional differences.

Research Question 5 asked whether differences in moral judgment development could be distinguished by Prep School attendance status for cadets in the Class of 1999?

Some Class of 1999 cadets that entered the Air Force Academy as freshmen had already completed a year of "education" in a military environment. The Academy maintains a preparatory school, which enrolls cadet candidates that are otherwise qualified for admission, but require additional academic instruction to improve SAT/ACT scores. The population of cadet candidates at the preparatory school as a whole represent those with lower SAT/ACT scores, recruited athletes, and prior enlisted military personnel with outstanding military records but requiring academic preparation.

Unfortunately, no research existed as to how this additional year of education related to cadet moral reasoning development. As a result of this void in empirical research, the relationship between preparatory school attendance, USAFA entry DIT score, and longitudinal follow-up DIT score was investigated to determine whether students who attended the preparatory school prior to entry into USAFA differed in moral judgment from cadets that entered directly into the

Academy from high school.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this variable. The independent samples t-tests assessed whether there were statistically significant mean differences in entry and follow-up DIT scores (P and N2) for the group of cadets that attended prep schools versus the group of cadets that did not attend prep school.

The entry sample contained 836 cadets in the non-preparatory school group and 144 cadets in the preparatory school group. The follow-up sample contained 232 cadets in the non-preparatory school group and 41 cadets in the preparatory school group. The independent samples t-test analysis failed to identify statistically significant group differences for entry P-score, follow-up P-score, and follow-up N2-score. The analysis did identify statistically significant group differences in entry N2-score with the non-preparatory school group outscoring the preparatory school group 35.6 to 34.2 ($p < .05$ at .049).

The weight of the evidence suggested that no differences in DIT scores existed based on preparatory school attendance. The analysis failed to find differences in entry P-scores and the slight statistically significant differences in entry N2-scores were barely significant at $p = .049$. Any observed or statistically significant differences in entry DIT scores were tempered by the four years of Academy attendance as no statistically significant follow-up DIT score group differences were detected. The statistically significant group differences in entry N2-scores indicated that incoming cadets that attended preparatory school may

have been socialized to employ slightly lower levels of principled moral judgment.

Research Question 6 examined whether differences in moral judgment development could be distinguished by cadet gender for students in the Class of 1999?

Much scholarly debate has focused on the issue of gender in moral judgment development. Gilligan (1977) suggested that moral development differs for females than for males because females are socialized toward the concept of caring, social relationships, and feelings. Males, on the other hand, were justice based in their concept of morality. Gilligan contended that because of the theorized differences between the genders, males would score higher on the DIT than females.

While scholars recognized the apparent logic of Gilligan's claims, empirical research has failed to support it. Thoma (1984) conducted a secondary analysis of over 6,000 subjects to investigate the relationship between gender and moral reasoning. His findings indicated that gender difference did not support Gilligan's theory--females actually scored higher on the DIT than males. Dissertations by Guldhammer (1983), Shaver (1984), Trull (1990), Wood (1993), and Quarry (1997) either failed to find any gender differences in moral reasoning or found differences that favored females.

Rice (1986) attempted to investigate the gender relationship to moral reasoning at the Air Force Academy. He included the variable in his study in

response to a 1985 report that indicated that female members of the USAFA class of 1980 had outperformed their male counterparts academically and militarily (Ginovsky, 1985). Based on his small sample of cadets, he found no gender differences in moral judgment (Rice, 1986).

Investigation of cadet gender group differences in principled moral reasoning produced revealing results in the USAFA study. Both P-score and the new index (N2-score) were utilized to investigate differences in principled moral reasoning.

Table 67 indicated that no significant P-score or N2-score differences existed between male and female cadets at entry into USAFA. Male and female cadets utilized similar levels of principled moral judgment.

Table 67: Male/Female Cadet DIT P-score and N2-score at Entry

| Mean/SD | <u>Entry P-score^a</u> | | <u>Entry N2-score^a</u> | |
|---------|----------------------------------|--------------------|-----------------------------------|--------------------|
| | Males (n=822) | Females (n=158) | Males (n=822) | Females (n=158) |
| Mean | 28.5 | 29.1 | 35.5 | 35.2 |
| SD | 12.4 | 12.7 | 8.2 | 8.6 |

^aIndependent samples t-tests did not reveal significant differences between males and females at entry for P-score and N2-score.

Table 68 indicates that females scored significantly higher on P-score and N2-score than male cadets at the completion of four years of Academy attendance. Differences in follow-up P and N2 scores were statistically

significant at the .05 level with female cadets scoring significantly higher than males.

Table 68: Male/Female Cadet DIT P-score and N2-score at Follow-up

| Mean/SD | Follow-up P-score ^a | | Follow-up N2-score ^a | |
|---------|--------------------------------|-------------------|---------------------------------|-------------------|
| | Males (n=240) | Females (n=29) | Males (n=240) | Females (n=29) |
| Mean | 38.2 | 44.6 | 41.7 | 46.0 |
| SD | 15.5 | 17.4 | 10.8 | 11.6 |

^aIndependent samples t-tests revealed significant differences between males and females at follow-up for P-score and N2-score.

Further analysis of male and female cadet DIT scores at USAFA included comparison of results to the moral judgment literature. The comparison of USAFA male and female DIT P-scores with the normative college sample reported in Table 69 revealed mixed results.

Table 69: Male and Female DIT P-scores

| Mean/SD | College Males (n=449) | College Females (n=436) | USAFA Males (n=240) | USAFA Females (n=29) |
|---------|--------------------------|----------------------------|------------------------|-------------------------|
| Mean | 44.1 | 45.9 | 38.2 | 44.6 |
| SD | 12.2 | 12.2 | 15.5 | 17.4 |

Rest's normative samples indicated trivial differences between male and female P-scores with females having a slight advantage (1990, p. 6.1). Female

cadets scored comparable to the male and female normative college samples. Male cadets, on the contrary, scored substantially lower than the male and female normative college samples reported by Rest (1990).

This study joined several other studies in discounting Gilligan's claims that females are shortchanged by current theories of moral judgment development (Thoma, 1984; Guldhammer, 1983; Shaver, 1984; Trull, 1990; Wood, 1993; and Quarry, 1997). Additionally, this study was able to investigate Ginovsky's (1985) assertions that female cadets outperform male cadets in many program areas. Where Rice's (1986) Academy study failed to use representative cadet samples that could detect gender differences, this study clearly found that female cadets experienced larger gains in principled moral reasoning than male cadets.

Research Question 7 queried whether differences in moral judgment development could be distinguished by cadet MPA for students in the Class of 1999?

Military Performance Average (MPA) represented a unique Air Force Academy rating system. It measured cadet performance concerning military obligations, responsibilities, and conduct. It was established using the same 4.0 scale that Grade Point Average (GPA) utilizes.

While no direct empirical evidence existed relating MPA to moral judgment, it was a relevant variable of concern to Academy decision-makers. Lawrence (1978) conducted a study, which indicated that some groups in American society require strict adherence to a codified set of beliefs as a

condition of membership within an autocratic community. He found that members of the group had high stage four law and order scores, but low P-scores. This was consistent with bureaucratic socialization theory where a rule-oriented socialization process was pursued (Slaten, Lampe, Sparkman, and Hartmeister, 1994). Hoy and Miskel (1982) found that bureaucratic systems consistently molded the behavior of their members to ensure individual beliefs and values corresponded with those of the organization.

The intent of the present study was to determine if higher levels of MPA represented a dedication to a law and order justification, translating into an inverse relationship between MPA and moral reasoning--those with high MPAs being conventional moral reasoners and those with lower MPAs being principled moral reasoners.

A Pearson correlation coefficient was computed to investigate the relationship between cadet P-score, cadet N2-score, and MPA. The correlation matrix failed to identify significant relationships between cadet MPA and follow-up N2-score ($r=.013$, $p=.84$) or follow-up P-score ($r=-.047$, $p=.45$).

Review of the stage and index scores was accomplished to determine if evidence of the group socialization hypothesized by Lawrence (1978) was evident. According to Lawrence's hypothesis, members of the military profession group would have high stage 4 law and order scores, but low P-scores because of the strict adherence to a codified set of beliefs required as a condition of membership within an autocratic community. Table 70 provided stage and index

score profiles for a normative college sample, the USAFA cadet follow-up sample, and a sample of the USAFA faculty.

Table 70: Profiles of DIT Stage and Index Scores

| Group | | 2 | 3 | 4 | 5A | 5B | 6 | P | N2 |
|-----------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|
| College ^a | M | 3.05 | 8.60 | 17.01 | 15.81 | 5.20 | 4.89 | 43.19 | ----- |
| | S | 2.81 | 5.14 | 8.07 | 6.31 | 3.40 | 3.34 | 14.32 | ----- |
| McNeel ^b | M | ----- | ----- | ----- | ----- | ----- | ----- | 45.81 | 49.18 |
| | S | ----- | ----- | ----- | ----- | ----- | ----- | 13.58 | 12.18 |
| USAFA I ^c | M | 2.38 | 11.14 | 19.67 | 18.42 | 1.92 | 3.09 | 39.05 | 42.38 |
| | S | 3.47 | 7.00 | 9.00 | 8.20 | 2.65 | 3.57 | 15.81 | 10.98 |
| USAFA II ^d | M | 1.19 | 6.96 | 22.44 | 18.18 | 2.67 | 5.82 | 44.46 | 46.73 |
| | S | 2.09 | 5.55 | 9.24 | 8.59 | 3.07 | 3.35 | 16.21 | 10.59 |

(M): Mean

(S): Standard Deviation

^aGeneral college sample (n=270) as reported by Rest (1990, p. 6.2).

^bRest, Thoma, Narvaez, and Bebeau (1997b, p. 502) reported college senior N2-scores using McNeel's (1994) study (n=263).

^cUSAFA Class of 1999 at follow-up using matched-pairs sample (n=201).

^dLuedtke (1999) administered the DIT to a sample of the USAFA military and civilian faculty (n=85).

Comparison of the USAFA cadet and faculty profiles with the normative college student profile provided support for Lawrence's assertions. The USAFA cadet and faculty profiles yielded similarly elevated stage 4 scores in comparison to the normative college sample. Both USAFA samples showed higher stage 4 scores than the college sample. The USAFA faculty P-scores were higher than the USAFA cadet P-scores, however, the faculty scores were relatively equal to

the normative college sample P-scores. The USAFA cadet profile supported Lawrence's prediction of elevated stage 4 scores and lower P-scores when compared to the normative college sample.

Although not codified as a stated research purpose of this study, MPA did correlated significantly with cadet GPA ($r=.327$, $p<.0001$). This result could prove useful in future research in the military academy environment.

Research Question 8 questioned whether differences in moral judgment development could be distinguished by cadet GPA for students in the Class of 1999?

Previous research into the relationship between GPA and moral judgment revealed mixed results. Clouse (1991) and Wood (1993) indicated that GPA was positively associated with principled moral reasoning as measured by the P-index. While these earlier studies showed some correlation between GPA and moral judgment, Quarry (1997) found no relationship between principled moral reasoning (P-score) and GPA at a Christian Liberal Arts institution.

The Air Force Academy, like other colleges and universities, uses GPA as an indicator of course success in academics. Information on cadet GPA was available for 269 of the 273 cadets that completed the follow-up DIT with useable scores.

A Pearson correlation coefficient was computed to investigate the relationship between cadet P-score, cadet N2-score, and GPA. Analysis of the correlation matrix revealed mixed results when comparing these findings to the

earlier studies. Like Quarry (1997), the correlation matrix did not indicate a significant relationship between GPA and follow-up P-score ($r=.0966$, $p=.114$). The correlation matrix did reveal a significant relationship between cadet GPA and follow-up N2-score ($r=.149$, $p=.014$) which compared favorably with the Clouse (1991) and Wood (1993) studies. These mixed results indicated that the traditional principled moral judgment index (P-score) provided less significant results in the cadet sample than the new index (N2-score).

Research Question 9 asked whether differences in moral judgment development could be distinguished by the military academy graduation history of a cadet's parents or siblings for Class of 1999 members?

Like other experiential opportunities, parent-student interaction is thought to have an important role in moral judgment development (Rest, 1974; Gilligan, 1982). Parents, by virtue of their child-rearing duties, had an initial influence on the moral development of their children through warmth, limit setting, and encouragement of independence (Newman and Newman, 1978). Parenting, according to Piaget (1965), induced development of obedience of obligations out of mutual respect.

Little empirical research between the parental variable and moral judgment exists. Wood (1993, p. 32) suggested that one area that may predict moral development is parental educational level since formal educational level had a direct impact on DIT score. Restrum (1993) found a relationship between mother's educational level and a student's ego identity status. Haan, Smith, &

Block (1968) found that home background was related to moral judgment where students reported their parents were well educated. These students also reported some degree of parent to parent or parent to child conflict that might represent opportunities for moral disequilibrium.

Since the Academy's history dates back to 1955, the institution has increasingly enrolled cadets whose parent(s) and/or sibling(s) graduated from a military academy. Investigation of the relationship between military academy graduation status of cadet parents and/or siblings and cadet moral reasoning was intended to evaluate whether the interaction could be useful in predicting cadet moral development.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry and follow-up DIT scores (P and N2) for the group of cadets that had parents or siblings that graduated from a military academy and those cadets that did not.

None of the independent samples t-tests identified statistically significant differences in entry or follow-up DIT (P and N2) for the cadets with parent or sibling Academy graduates versus the group of cadets with parents or siblings that were not Academy graduates. This study could not identify parent or sibling group differences based on Academy graduation status. Consequently, this study could not support the earlier findings of Restrum (1993) or Haan, Smith, & Block (1968).

Research Question 10 investigated whether differences in moral judgment development could be distinguished by entrance waiver status for cadets in the Class of 1999?

Waiver status was a variable that represented whether a cadet received an admissions waiver as part of his/her matriculation at USAFA. Waivers were provided to candidates who did not meet specified admissions criteria in certain areas under consideration, but excelled in other areas considered for admissions. Examples included cadets with tremendous leadership and academic potential that scored below minimum requirements on physical fitness standards and recruited athletes that were below academic standards.

This variable commingled academic, athletic, and social variables into a uniquely considered category at the Air Force Academy. It was included as a variable in this research to determine whether waiver status (independent of type) related to cadet moral judgment development.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry and follow-up DIT scores (P and N2) for the group of cadets that required an entry waiver to enter the Academy and those cadets that did not require a waiver to matriculate at the Academy. Using the entry sample of 980 good DIT scores, 823 cadets did not require entry waivers while 157 required waivers. The follow-up sample of 269 usable DIT scores revealed 233 cadets did not require entry

waivers while 36 cadets did require entry waivers.

While the analysis failed to identify statistically significant group differences in entry P-score, statistically significant group differences were identified for entry N2-score (see Table 71). The analysis did identify statistically significant group differences in follow-up P-score and N2-score (see Table 72).

Table 71: Waiver/Non-waiver Cadet DIT P-score and N2-score at Entry

| Mean/SD | <u>Entry P-score^a</u> | | <u>Entry N2-score^a</u> | |
|---------|----------------------------------|-----------------------|-----------------------------------|-----------------------|
| | Waiver (n=157) | Non-waiver (n=823) | Waiver (n=157) | Non-waiver (n=823) |
| Mean | 27.0 | 28.9 | 33.6 | 35.8 |
| SD | 12.9 | 12.4 | 8.9 | 8.1 |

^aIndependent samples t-tests did not reveal significant differences between the waiver and non-waiver groups at entry for P-score, but did identify significant group differences for entry N2-score.

Table 72: Waiver/Non-waiver Cadet DIT P-score and N2-score at Follow-up

| Mean/SD | <u>Follow-up P-score^b</u> | | <u>Follow-up N2-score^b</u> | |
|---------|--------------------------------------|-----------------------|---------------------------------------|-----------------------|
| | Waiver (n=36) | Non-waiver (n=233) | Waiver (n=36) | Non-waiver (n=233) |
| Mean | 32.2 | 39.9 | 36.7 | 43.0 |
| SD | 17.0 | 15.4 | 12.0 | 10.5 |

^bIndependent samples t-tests revealed significant differences between the waiver and non-waiver groups at follow-up for P-score and N2-score.

Analysis of DIT scores by entry waiver status indicated that the group of cadets not requiring entry waivers consistently utilized higher levels of principled moral reasoning as evidenced by higher entry N2-scores, follow-up P-scores, and follow-up N2-scores when compared to the group of cadets requiring entry waivers. These results suggested that the cadets that required entry waivers lagged behind their cadet counterparts in the usage and development of principled moral judgment.

These findings appear to support Rest's (1990) assertions that the DIT shows correlation with achievement and IQ-type measurements. According to Rest (1990, p. 6.4), "IQ tests presumably indicate how subjects compare with each other in speed of learning, in the ability to grasp complex relationships, in ability to think abstractly and process information; and therefore, those subjects who are higher on IQ-type measures are more likely in general to be further along in cognitive development in moral judgment." The non-waiver group in this study supported Rest's assertions as subjects thought to be representative of higher scorers on achievement-type measures.

Research Question 11 researched whether differences in moral judgment development could be distinguished by a cadet's prior military service status for students in the Class of 1999?

Prior military service was another unique variable in the Air Force Academy environment. This extra experience represented an interim period between high school graduation and matriculation at the Academy. Whereas

most cadets entered the Academy directly after high school graduation, many became cadets after serving on active military duty in enlisted status. During this enlisted period, the cadet experienced social interaction in the military environment, most likely lived away from home, received some form of character education through basic training, were made responsible to a larger organization, and were held accountable for their actions. Since this variable represented an additional and unique period of age and educational development, it was investigated using entry and follow-up DIT scores.

The prior military service variable was thought to represent a socialization variable similar to the theories of Lawrence (1978) and Slaten, Lampe, Sparkman, & Hartmeister (1994). As such, cadets who were already exposed to military service would be more likely to use less principled moral reasoning because of their conditioning toward law and order accountability.

Independent samples t-tests of entry and follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in entry and follow-up DIT scores (P and N2) for the group of cadets that had prior military service before his/her attendance at USAFA and those cadets that did not have prior military service. Utilizing the entry sample of 980 good DIT scores, 874 cadets had no prior military service and 106 cadets had some form of prior military service. The follow-up sample of 273 good DIT scores revealed 243 cadets without prior military service and 30 cadets with prior military service.

Analysis of entry and follow-up DIT scores provided mixed results. Group differences at entry were statistically significant. Table 73 revealed that the group without prior military service outscored the prior military service group in entry P-score and N2-score.

Table 73: Cadet DIT P-score and N2-score at Entry for Prior Military Service Group Differences

| Mean/SD | <u>Entry P-score^a</u> | | <u>Entry N2-score^a</u> | |
|---------|----------------------------------|-----------------------|-----------------------------------|-----------------------|
| | Service (n=106) | No Service (n=874) | Service (n=106) | No Service (n=874) |
| Mean | 25.8 | 28.9 | 33.9 | 35.6 |
| SD | 11.6 | 12.5 | 8.2 | 8.2 |

^aIndependent samples t-tests revealed significant differences between the prior military service and no prior military service groups at entry for P-score and N2-score.

Analysis of follow-up DIT scores by prior military service status failed to identify significant group differences. While follow-up differences between groups were observed, the smaller realized sample of prior military service cadets may have prevented detection of statistically significant differences. Another possible reason for the lack of statistically significant differences at follow-up was that the four years of Academy attendance socialized all cadets to use similarly principled moral reasoning with relationship to prior military service status.

It appeared from the research results that cadets with prior military service may have already been influenced by the stage 4 socialization process discussed by Lawrence (1978) and Slaten, Lampe, Sparkman, and Hartmeister (1994). The exposure to the military may have restricted the principled moral reasoning of the prior service group at entry where the non-military service group had not yet been socialized. After four years of Academy exposure to the military environment, the two groups had similar principled moral judgment scores. The follow-up similarities in principled moral reasoning scores could indicate that cadets in the non-military service group also were socialized by the military environment over time.

Research Question 12 questioned whether there were differences in senior class (Class of 1999) cadet moral reasoning (DIT scores) based on senior class, leadership position status/experience?

Role-taking was important in moral development because it provided subjects with the opportunity to view issues from varying perspectives and be placed in situations where they were responsible for the welfare of others. Being in a leadership position forced an individual to struggle with difficult decisions, which contributed to the moral disequilibrium that was necessary for transition to a higher stage of moral reasoning. Researchers also asserted that leadership roles provided opportunities for moral disequilibrium (Rest, 1974 and Keasey, 1971).

Independent sample t-tests of follow-up P-scores and N2-scores were utilized to assess this hypothesis. The independent samples t-tests assessed whether there were statistically significant mean differences in follow-up DIT scores (P and N2) for the group of cadets that were in military leadership positions and those cadets that were not filling military leadership positions. Using the follow-up sample of 273 DIT scores, 261 cadets were not in recognized leadership positions while 12 cadets held squadron, group or wing commander positions.

The results of the analysis failed to identify statistically significant leadership group differences for follow-up P-score. Statistically significant leadership group differences were identified for follow-up N2-score. Cadets in leadership positions scored higher in N2-score at 49.0, while non-leadership position cadets scored 41.9.

While group differences in N2-score were identified, the small number of leadership group cadets participating in the study tempered the generalizability of these results. Although a larger leadership group sample would have been preferred, the group differences in N2-score appeared to tentatively support the suggestions of researchers that leadership roles may have contributed to the moral disequilibrium required for growth in principled moral judgment (Rest, 1974; Keasey, 1971; and Kohlberg, 1976). Further investigation of these tentative findings are necessary through larger sample sizes and controlled pre- and post-testing to ensure follow-up differences are not associated with group

differences in moral judgment prior to the leadership role intervention.

Moral Experience Questionnaire Findings

This section focuses on research question 13 and its investigation of cadet interpretations of the Academy experience. It discusses the results of the qualitative analysis of the open-ended cadet responses on the Moral Experience Questionnaire (MEQ).

The college environment is a collection of formal and informal academic, experiential, social, and moral interventions. In each case, the subject comes to individualized understanding of the particular meaning of these experiences. A well-intentioned moral intervention could have negative affects on a student's moral judgment development while an informal discussion with a professor or classmate might have significant moral reasoning development implications.

In order to understand the importance that subjects place on the relationship between their collegiate experiences and their moral judgment development, many researchers have utilized experiential interviews, checklists, or questionnaires (Deemer, 1987; Rest, 1975; Rice, 1986; Trull, 1990; Spickelmier, 1983; Volker, 1979; and Whiteley, 1980). Rest (1975, 1979 and 1986) utilized a single question survey where subjects were asked to reflect upon their experiences of the two previous years to speculate about what influenced their moral reasoning.

Rest (1979, p. 222) contended that eight kinds of experiences seemed to facilitate development in moral judgment. These included: (1) discussing controversial problems with others and in the process gaining practice and insight in making moral judgments; (2) being exposed to better moral thinking than one's own; (3) recognition of conflicts in one's own values, or in the inadequacy of one's own assumptions and decision-making strategies; (4) the assumption of new responsibilities for taking care of others; (5) the push to make important life decisions which created the need for a conceptual framework for sorting the issues involved and for making consistent decisions; (6) experiencing personal tragedy or being touched by another's problems which shocked one into reflection; (7) broadening experiences; and (8) meeting new people who have drastically different perspectives.

Deemer (1987) and Spickelmier (1983) utilized interviews of college subjects to determine what experiences contributed to perceived development in moral reasoning. Spickelmier discovered that students who became 'involved' in college perceived higher moral reasoning growth and had higher DIT scores. Deemer's 1987 study supported Spickelmier as subjects with higher DIT scores identified collegiate involvement and academics as key factors in moral reasoning development. Whiteley (1980) discovered that subjects identified their immediate peer group, exposure to different perspectives, relationships with the opposite sex, personal spiritual experiences, and exposure to more mature thinkers as contributors to moral judgment development. Few in Whiteley's

study identified relationships with faculty and staff as being important. Volker (1979) discovered that subjects identified significant decisions with a person of the opposite sex as having an influence. Volker (1979) and Rest (1979) indicated that subjects moving away from home had an impact on moral judgment development. Resnikoff and Jennings (1980) reported that subjects identified disequilibrium, diversity of views, and decision making as college environment contributions to their moral judgment development.

Rice (1986) developed a Moral Development Questionnaire to obtain USAF Academy cadet inputs on factors contributing to their moral development in association with a core philosophy course. Rice's questionnaire was designed as a closed-ended checklist where cadets selected from predetermined categories of experiences. Additionally, Rice's questionnaire was rigid in that cadet's could only select one categorical type of experiences as have the most impact. Rice limited cadets selections to the honor code system, parental values and attitudes, religious training and beliefs, and analyzing contemporary moral issues facing our society.

Research Question 13 inquired as to what USAFA and non-USAFA experiences cadets in the Class of 1999 cohort would identify as contributing to or restricting their moral judgment development during the four years of Academy attendance?

The MEQ was administered to a sample of Class of 1999 cadets through the MAS-440 and MAS-472 courses. Of the 398 cadets available in the MAS-

440/MAS-472 sampling frame, 310 (77.9%) completed the MEQ. A slightly lower participation rate was realized on the MEQ than on the DIT. The slight deviation in participation rate was likely attributed to a stringent statement contained on the informed consent document (Appendix C). Military legal authorities required a Uniformed Code of Military Justice (UCMJ) statement on the informed consent document stipulating disciplinary action for subjects providing personal identification coupled with implicating statements related to criminal conduct or honor code violations.

Analysis of the MEQ provided an enlightened view of cadet perceptions of moral judgment growth at the Academy. An inductively devised coding system was utilized to categorize responses. The honor code system, peer and faculty interaction, the Philosophy 310 core course, reflection, leadership/decision responsibility, social interaction, discussion, and role-modeling all emerged as positive events/relationships in cadet moral judgment development. The restrictive Academy environment, peer pressure, poor role modeling, and institutional dogma emerged as key events/relationships that had a negative impact on cadet moral judgment growth.

While the MEQ contained five distinct open-ended questions for cadets to ponder, the subject areas focused on Academy and non-Academy experiences and relationships (see Table 55 in Chapter 4). These Academy and non-Academy events were additionally coded into positive and negative experiences/relationships. The remainder of this section discusses the positive

and negative relationships/experiences identified by cadets on the MEQ. The MEQ response categories will be compared to the literature associated with moral experience questionnaires in the college environment.

Chapter 4 presented detailed results of the categorized responses obtained from subjects on the MEQ. The coding classifications and percentage of respondents for each category were detailed in Tables 59-63 in Chapter 4. The presentation of the MEQ data in Chapter 4 was organized to correspond to each open-ended question. As such, the percentage of respondents for each category was relevant in determining the significance of results. In order to provide a holistic view of responses for comparison to the literature, the MEQ presentation here in Chapter 5 focuses more on the types of responses with less attention on the percentages of respondents for each category.

Responses on the MEQ indicated that cadets perceived many more relationships and experiences that contributed to their moral judgment development than relationships and experiences that restricted development in moral judgment. According to the responses, age-cohort peers provided multiple opportunities for moral judgment development. Respondents identified peer discussions, peer support, advice, and relationships with members of the opposite sex as examples of opportunities to develop moral judgment. Additionally, peers provided positive role-modeling examples and opportunities for vicarious learning from peers that were poor examples. Table 74 provides examples of actual MEQ responses associated with peer contributions.

Table 74: MEQ Responses Identifying Peer Related Issues

Statement

"Friends getting kicked out...philosophical discussions with friends...By understanding how others' moral foundations developed, I have a broader personal perspective of morality as a whole...I can incorporate others' logic into my sense of morality."

"Having friends self-report honor violations and then have a chance to recover... People make mistakes and the best way to get on with life is to fess up and let others know how important this is to you."

"Seeing peers that took advantage of the system (fake IDs, etc.)...gained a better understanding of how all of society pays for the illicit actions of a few."

"Watching friends get kicked out, seeing moral dilemmas first hand and their reactions in other people...taught me to see issues more deeply and not just take a party line response."

Subjects also identified the positive moral judgment contributions of the USAFA honor code and its subsequent categories of honor lesson training, honor boards, and honor representative duties. Cadets indicated that living with the honor code on a daily basis, participating in honor training lessons with discussion of issues, and either experiencing or knowing someone who experienced an honor board all contributed to their ability to reason through dilemmas. The honor code represented a set of institutional rules that strongly encouraged cadets to confront honor/integrity issues rather than ignoring them. Table 75 provides examples of actual responses identifying honor code issues as being significant in the development of moral judgment.

Table 75: MEQ Responses Identifying Honor Code Issues

Statement

"Honor lessons and punishment for honor violations made me think about the issues more. Fear of getting in trouble and ending a career before it's started."

"I have had to write letters of disenrollment for fellow cadets as an honor chair which forces me to consider right versus loyalty."

"Honor education...learned that first priority is given to truth and personal integrity regardless of its effects on others, or your own performance."

"The honor code makes you think about something before you do it."

"The honor system forces you to live through moral issues and face the consequences for your actions."

Academic course contributions also arose in the cadet responses. While academic courses in general were identified by respondents, the junior year core philosophy course (Philosophy 310) specifically stood out as a significant contribution in moral judgment for 31.3 percent of the subjects. Cadets indicated that the course provided multiple opportunities for discussion of moral issues. Table 76 provides statements from respondents highlighting academic course contributions.

Table 76: MEQ Responses Identifying Academic Course Contributions

Statement

"Philosophy 310 helped me qualify what my beliefs are and to see how they hold up for different issues."

"The core philosophy course offered at USAFA...by having a daily, logical discussion about morality and ethics in a group setting."

"Philosophy 310 provided scenarios of controversial issues and methods to arrive at the best solution."

"Classes that discuss and explore these issues such as philosophy...these have made me more aware to such issues and have showed how important it is to make these decisions."

Respondents identified various experiences and relationships that provided dissonance in moral issues. The honor code non-toleration clause forced many cadets to wrestle with the conflicting loyalties. When honor issues arose, cadets had to decide between being responsible to their honor code obligations or maintaining loyalty to their friends. Cadets also indicated that the socialization to the military environment provided dissonance when reasoning through moral issues. Roles, laws, norms, and expectations differed between the military and civilian environments. Respondents indicated that peer cultural norms associated with drinking underage conflicted with civilian and military laws governing the issue. Cadets had to reason through the peer pressures associated with drinking underage and whether civilian laws regulating the act were reasonable. Breaks away from the Academy during the academic year and

during weekends appeared to provide the most opportunities for dissonance experiences. Table 77 contains MEQ responses identifying the contributions of dissonance in moral judgment development.

Table 77: MEQ Responses Identifying Dissonance Contributions

Statement

"Comparing the difference in military versus non-military environments and seeing which view I believed to be correct."

"Watching other college students during a summer program use fake IDs regularly to get into bars...it amazed me that to them, there wasn't even an issue of right and wrong--it was just something they did."

"I got in trouble for drinking under age. I don't think that it was immoral decision to drink underage, but I had a good look into my character from the counseling center."

"My frequent trips to Pueblo and Aurora...I saw many things such as drug abuse, teenage pregnancies, and underage drinking that shocked me...I had never seen most of this in person."

"Relationships with high school classmates on vacation. Some friends got involved with 'other' activities that didn't promote a healthy lifestyle and questioned whether I should still remain their friend or not."

"I feel that getting through to civilians all over has been key, especially ones that don't understand our job. By explaining why we do what we do and letting them know we are people too."

Faculty and staff contributions to cadet moral judgment development were also identified. MEQ responses indicated military faculty contributed to moral judgment through role-modeling. Cadets looked to officers for the "leader's view"

of real world dilemmas. One-on-one discussions with officers also provided broader perspectives in moral judgment. Moral disequilibrium often emerged as cadets wrestled between the moral obligations of officership and the loyalties that were reinforced through peer pressure. While most identified officer interactions were associated with the Academy faculty, the Academy sponsor family program also provided officer-cadet interaction opportunities. Another positive influence was associated with officer trust in cadets. Subjects indicated they were encouraged to advance in moral judgment when officers trusted them to make important decisions. Table 78 provides cadet MEQ responses associated with faculty interaction.

Table 78: MEQ Responses Identifying Faculty/Officer Contributions

Statement

"Faculty give us a leadership perspective and a sampling of real-time, active duty experiences that we could parallel to our own problems and issues."

"Faculty always raise relevant issues and make me either see a bigger picture and/or make my own arguments more founded."

"Officers linked with the Center for Character Development always had a few words to say that I felt were very wise and thought provoking."

"Talked about issues they (faculty) had faced and gave reasons to make the right choice."

According to cadets, the Academy provided many formal and informal role-taking opportunities, which were perceived as beneficial in the development of moral judgment. The prominent role-taking opportunity apparent in the MEQ responses was having responsibility for other cadets. Many respondents identified being responsible for making decisions that directly affected the lives of fellow students as forcing them to consider actions carefully. When these cadets realized they were responsible for something or someone bigger than themselves, they appeared to take moral decision-making responsibilities more seriously. In addition to the responsibility aspects, the role-taking opportunities provided practice in moral decision-making. Many respondents indicated that they learned valuable lessons from this decision-making practice. Table 79 provides specific examples of cadet responses identifying role-taking opportunities.

Table 79: MEQ Responses Identifying Role-taking Contributions

Statement

"When you are in charge, you find out that there are people who don't necessarily have the same moral background as you and as a result you need to understand that but at the same time try and involve those moral principles necessary to rectify the situation."

"I have had to write letters of disenrollment for fellow cadets as an honor chair which forces me to consider right versus loyalty."

"Commander jobs such as BCT (basic training) flight commander, squadron commander...makes you weigh two or more sides to various issues...determine consequences/solutions based many times on spirit versus letter of the law."

Table 79 (continued)

Statement

"Being in a leadership position. You can do what is right and also the popular thing. Doing what is right is often harder, but I have learned to set aside pressures from others and work toward the decision by myself."

"Leadership opportunities...decisions directly effect others...it makes me think harder than if I would have been thinking solely on behalf of myself."

Some respondents indicated that much of their moral judgment development was associated with family influences. Subjects indicated that their development in moral judgment was related to the values they developed through experiences with parents, siblings, and other relatives. Table 80 provides examples of cadet responses supporting the influence of family values.

Table 80: MEQ Responses Identifying Family Contributions

Statement

"I talk about morals a great deal with my parents and continue to even while attending USAFA...they still have the biggest affect on my morals."

"From my father's retirement I've realized that military personnel have a higher average level of integrity. This helps me determine that much of what being an officer consists of is representative of the high moral standards to which I want to adhere."

"Parents and family...in living and experiencing life, I've come across crossroads where the way I was raised and the people I was around helped promote discussion about issues which helped make my decisions easier to make."

"Observing my parents because I admire them and I watch how they handle moral issues and use them as examples."

Personal spiritual beliefs and church attendance emanated from MEQ responses as well. Respondents indicated that religious beliefs and peer spiritual experiences provided the necessary framework for making moral judgments. Responses stated that adherence to their spiritual beliefs provided the necessary guidance when confronted with moral decision-making opportunities. Table 81 provides spiritually-affiliated MEQ statements.

Table 81: MEQ Responses Identifying Religious Contributions

Statement

"Chapel programs and bible study...by learning about the basics of morality, they helped me to be better able to realize moral dilemmas and how to work through them."

"Bible classes...reasoning through the issues in light of God's truth...we look at ethical dilemmas in the bible."

"Spiritual classes convinced me that there is a fine line between being overly zealous in terms of religion and morality and being too rational--you have to strike a balance between the two."

"Attendance at church. I have learned to turn things over to God and he will help guide me through the dilemma."

Although the Academy is typically thought of as a conservative institution with stringent rules and a focus on conformity, MEQ responses indicated that diversity of viewpoints was abundant. Cadets indicated that the Academy environment placed them in close proximity to diverse cultural, gender, and

moral viewpoints on a daily basis. This perceived diversity exposed cadets to viewpoints different from their own which provided opportunities for moral disequilibrium. Table 82 provides MEQ responses associated with diversity at the Academy.

Table 82: MEQ Responses Identifying Diversity Contributions

Statement

"The experience of coming together with many different people from all walks of life and countries...there is also a lot of people that don't have the same morals I do and I have to live with it."

"By hearing a lot of different views of subjects from different people around the country."

"Living with the various backgrounds...it forced me to deal with the race issue...I came from a somewhat racist family and had to deal with the issues involving that fact."

"Another experience is being around males all the time...I've begun to see the different perspective."

A smaller number of respondents perceived historical and generational effects in their moral judgment development. Cadets indicated that current issues in the media forced them to confront moral issues. The most prominent media-related moral issue identified by the respondents was the President Clinton-Monica Lewinsky affair. Certain cadets identified the admitted lying and behavior of the president as troublesome. They identified the dissonance

between their professional obligations and personal actions. Additionally, some discussed a perceived double standard. Some respondents questioned why the president should be allowed to remain in office after lying when a cadet would be disenrolled from the Academy for lying. Table 83 provides examples of cadet responses identifying the impact of historical/generational events.

Table 83: MEQ Responses Identifying Historical/Generational Contributions

Statement

"The Clinton-Lewinsky scandal disgusted me and made me believe that our private lives are exactly that--private."

"President's problems caused me to think about my own leadership and if I am setting a good example."

"Social/political situations such as the Clinton situation. It makes you think about issues from the perspective of society and civilians which is who we are working for...so it's important to see their point of view on moral issues as well."

"The Clinton-Lewinsky scandal showed me importance of a leader having integrity and how disgusting it can be when your leader is a liar."

"President Clinton...look at where the values of our nation are going."

While many positive environmental contributions were identified on the MEQ, all of the responses eventually indicated that personal reflection about moral issues was an important aspect of moral judgment development. All of the experiences and relationships identified by cadets eventually led to a student reflecting about the moral implications. Some 35.8 percent of the MEQ

respondents identified reflection as an important part of their ability to reason through moral dilemmas. Table 84 details specific MEQ responses showing the perceived importance of reflection in moral judgment development.

Table 84: MEQ Responses Identifying Contributions of Reflection

Statement

"All of these instances (honor) have forced me to question myself. In the past, I would just try to be good. Now, I try to be beyond reproach."

"Real life reflection on how even the smallest infractions cause problems."

"Being here has taught me to examine issues more closely, rather than always following my instinct."

"Understanding how easily the mind can rationalize wrong things."

While many positive moral judgment experiences emanated from the MEQ responses, subjects also perceived negative opportunities during their attendance at the Academy. Negative experiences, relationships, and examples tended to represent three categories. Perceived negative examples emanated from peer relationships, interaction with the faculty, and the restrictive Academy environment.

Peers were recognized earlier as a positive influence in moral judgment development. While the negative influences of the peer cohort were not as paramount, some respondents readily perceived that their moral judgment

development was restricted by their fellow cadets and civilian friends at home. The restrictive peer interactions appeared to center on peer pressure and poor examples. Subjects stated that peer pressure to indulge personal vices often led to moral conflict. Subjects further indicated that the peer pressure was too powerful to ignore and that they often made poor moral judgments due to the pressure. Poor peer examples also had negative consequences for some subjects. Respondents indicated that they had difficulty pursuing principled moral judgments when they observed their peers not being held accountable for improper moral acts. Table 85 provides examples of MEQ responses associated with the restrictive impact of peers .

Table 85: MEQ Responses Identifying the Restrictive Impact of Peers

Statement

"Peer pressure to not question why someone did something ludicrous...friends at home and here don't want to hear chastisement for their actions since it is uncool."

"You have to look tough in front of your friends."

"Peer pressure...it seems that every time I try to make what I think is the right decision, someone else tries to force their opinion on me."

"Friendships built at USAFA made it difficult to separate loyalty from reasoning moral issues."

"I was unsure about whether to report an incident...when I did, I was ostracized from my squadron and now as a senior I still experience the effects of the situation."

Poor faculty/officer role models also produced negative consequences in cadet moral judgment development. Some respondents indicated that they had observed poor conduct and role modeling by officers. The poor behavior by officers typically was associated with perceived incidents of lying. Additionally, some respondents felt cadets were held to a higher or idealized set of standards than officers were. Finally, some cadets indicated that certain Academy officers showed a lack of trust in cadets. Cadets perceived this lack of trust and empowerment as a restrictive outcome. Table 86 contains examples of MEQ responses associated with the restrictive impact of faculty/officers.

Table 86: MEQ Responses Identifying the Restrictive Impact of Faculty/Officers

| Statement |
|-----------|
|-----------|

"A senior officer telling you the punishment you must give an individual when you don't agree."

"Several Academy experiences have shown me that this is the way that it is and put up or shut up...these mostly occur with policies from all parts of the leadership here...these did this by preventing the cadets to raise ideas against the policies."

"I am hampered by superiors unwilling to listen and reason through moral issues...they already have their minds made up which leads to frustration and apathy on my part."

"Even worse is when I see officers making poor decisions...Why should they be here if they can't set the example? How can I tell others to follow the example set my officers when it is sometimes morally wrong?"

Cadets indicated that they perceived the strict Academy environment and its focus on conformity as a negative influence. Subjects indicated that academic, military, and athletic demands left little quality time in the daily schedule for personal reflection. The stringent rules and regulations also emerged as a restrictive influence. Subjects indicated that the overabundance of regulation provided fewer opportunities for moral decision-making. A perceived Academy/military party-line also had negative implications. Cadets indicated the perception that the institution tries to reduce most issues down to black and white answers. Respondents suggested that this Academy dogma failed to encourage their moral judgment. Finally, a portion of the MEQ respondents identified the Academy honor code as a negative influence. Subjects implied that the rule-based code failed to encourage critical moral reasoning. Instead of internalizing principled moral reasoning, cadets simply followed the rules to stay out of trouble. Table 87 provides examples of MEQ responses identifying the negative impact of the Academy environment.

Table 87: MEQ Responses Identifying the Restrictive Academy Environment

Statement

"Training on the honor code misses the mark. We shouldn't fear making moral and ethical decisions. Fear will only instill hatred and discontent, as well as future rebellion. My morals are set, however, others that my be weak are taught that integrity's other end is severe retribution and complete and total loss of all that is important...Instill confidence, not fear."

Table 87 (continued)

Statement

"Some of the honor training tries to group everybody into a singular, politically correct answer to moral dilemmas...however, we are still individuals despite wearing the same uniform."

"Here we are taught regulations and punishments are not subject to interpretation. This may be the most efficient way, but it is also the most cowardly and insensitive way to deal with people."

"Many classes here force a person to think in a box and the instructors want us to see everything their way...I have become more closed-minded since I have been here."

"Our lack of time to ourselves and our complete over-exposure to conservatism...I've been forced to always play devil's advocate when I hear any moral opinion here at the Academy."

It remains unclear whether these negative examples actually restricted moral judgment. On the contrary, some of the negative experiences may have actually aided moral judgment by serving as examples of how not to reason through moral issues. The individual reflection identified earlier as a positive aspect of moral judgment development played an important role in determining whether positive or negative moral judgment outcomes emanated from perceived negative examples.

Comparison of the MEQ results with the moral judgment experiential questionnaire literature discovered similar findings. Rest's (1979) eight types of experiences identified earlier in this section were readily apparent in MEQ

responses. Whiteley's (1980) categorizations of the immediate peer group, exposure to different perspectives, relationships with the opposite sex, personal spiritual experiences, and exposure to more mature thinkers as contributors to moral judgment development were also apparent in MEQ results. USAFA cadets did identify the important impact of faculty members which contradicted Whiteley's findings that faculty were not perceived as an important influence. Volker's (1979) identification of opposite sex relationships seemed to be important to cadets in the USAFA study as well. The disequilibrium, diversity of viewpoints, and decision-making opportunities expressed by Resnikoff and Jennings (1980) were replicated by cadet responses on the MEQ.

The MEQ responses also provided an expanded view of cadet perceptions originally started by Rice (1986). Where Rice's study limited cadets to closed-ended experiences, the MEQ enabled cadet respondents to identifying the significant experiences. Where Rice discovered only 4 percent of the cadets identifying the honor code as being significant in moral judgment development, MEQ respondents highlighted the honor code regularly. Far fewer MEQ responses identified the influence of parental values when compared to Rice's study. Cadet identification/selection of spiritual influences and analysis of contemporary moral issues were similar in both studies. The open-ended MEQ provided opportunities for identification of positive and negative influences beyond Rice's study.

Limitations

Character education is a broad-based philosophy with differing opinions as to what constitutes character development. This study focused on the Air Force Academy's adoption of Thomas Lickona's Components of Good Character which include moral knowing, moral feeling, and moral action. This study investigated only one portion of Lickona's components of good character (moral knowing--moral judgment). Similarly, this study's focus on moral reasoning means that it can only be related to Rest's second component on moral judgment and his third component on moral choice. Any attempt to generalize the results of this moral judgment research to include moral empathy or moral behavior would be improper.

This research was also designed to be a long range comprehensive study of how cadet moral reasoning changes over four years of Academy attendance for the Class of 1999. Since it focuses on the longitudinal changes in moral reasoning over four years, one cannot expect to form clear causal interpretations.

This research also utilizes institutional data concerning incoming cadet, moral reasoning scores on the DIT and databases containing demographic information on each cadet in the Class of 1999. Information contained in these archives must be considered carefully to ensure that it is an accurate depiction of the requested information. Archival data is appropriate when data pertinent to the research already exists, as long as the researcher considers that any biases

that occurred during initial data collection affects the current research.

Additionally, this research focused solely on the USAFA Class of 1999. The analyses and conclusions of this study only apply directly to the USAFA Class of 1999. It is important to point out, however, that demographic and programmatic similarities between the USAFA Class of 1999 and future classes suggest that the conclusions of this study may be generalizable to other Academy classes. Generational effects will likely limit the generalizability of these results over time. Key generational events that may have contributed to the moral judgment of subjects involved in this study will likely be different for future USAFA classes.

The smaller sample sizes utilized for some follow-up variable group comparisons also limited generalizability of results. For example, only 12 subjects in leadership positions participated in the study. A larger sample size for this variable would have provided additional support for normality of leadership group DIT scores. A larger sample size also would have provided more information on differences between the leadership/non-leadership group DIT scores at entry. This additional information would have aided detection of group differences associated with the role-taking intervention. Without an adequate number of pre-testing scores, it is difficult to assess whether follow-up differences were associated with the intervention or incoming group differences in DIT scores.

Finally, the reader must be cautious in generalizing the Class of 1999 experiential results obtained through the Moral Experience Questionnaire (MEQ). The cadet inputs obtained with the MEQ represent symbolic experiences that Class of 1999 cadets deemed relevant to their moral reasoning development. They represent perceptions that are laced with generational influences. Although each cadet class is typically similar in demographic make-up and each cadet class completes a similar institutional program, small programmatic changes can have a significant affect. The MEQ was designed to collect cadet inputs covering the four year Academy program. Since Class of 1999 cadets completed the MEQ as seniors, reference to experiences covering the entire four-year program might have been overcome by more recent experiences.

Recommendations for Future Research

While this study responded to 13 research questions, a number of ideas for future research emerged. Further research is necessary to evaluate the N2-index in DIT research. Continued comparison of P-scores and N2-scores will provide a solid body of evidence to determine which index is a better indicator of principled moral reasoning.

While this study clearly indicated a shift from conventional to principled moral judgment for the Class of 1999, reduced levels of principled moral judgment were identified at entry and exit. Replication of this study is necessary with other USAFA classes to determine if the lower entry and follow-up DIT

scores are unique to the Class of 1999.

Since DIT gender differences in college samples are not a common occurrence, the gender differences identified in this study pose new questions. Future gender research is necessary in unique college settings to determine if gender differences are related to type of higher education institution. Specific research of the Academy environment needs to be conducted to determine why females score higher than males on the DIT. Do females interpret Academy experiences differently from males leading to more dramatic shifts in principled moral judgment?

Further research of leadership role-taking opportunities is necessary. The small sample size realized for investigation of this variable at the Academy led to tentative conclusions. Utilization of larger sample sizes would be beneficial along with pre- and post-test closer to the intervention.

This study was not designed to identify statistical relationships between MEQ-identified experiences and cadet DIT scores. Future Academy research should employ both instruments utilizing a methodology that allows for matching of responses.

Finally, more detailed analysis of the effects of the conservative Academy environment are necessary. Future USAFA researchers need to conduct experimental studies which provide closer investigation of environmental influences in moral judgment development. The MEQ results suggested that further research of the USAFA honor code is necessary to determine how it

contributes to and restricts moral judgment development.

Conclusion

The collective results of research questions 1 through 13 indicated moral judgment similarities and differences within the USAFA Class of 1999. Group differences in DIT scores were apparent with some variables (prep school status at entry, gender at exit, GPA, entry waiver status, prior military service at entry, and leadership position at follow-up). No group differences or correlation were identified with other variables (subject attrition, age, geographic region, prep school at follow-up, gender at entry, MPA, and parent/sibling Academy graduation status).

Longitudinal gains in principled moral reasoning were also apparent in the study. Raw gains in principled moral reasoning for the USAFA Class of 1999 were similar to other college samples. However, significant differences were observed between the entry and follow-up principled moral reasoning scores of the USAFA sample when compared to other samples. Generational effects appeared to influence the USAFA sample as they had lower entry and follow-up DIT scores than most college samples.

The gains in principled moral reasoning indicated a distinct shift from conventional moral reasoning to principled moral reasoning. The less dramatic shift observed in this study could likely be attributed to the law and order Academy environment and its similarity to stage 4 moral judgment.

The inclusion of the new DIT index (N2-score) provided an opportunity for research comparisons with the traditional P-index. Mixed results were discovered. While N2-score outperformed P-score in certain analyses, significant group differences in P-score were identified when differences in N2-score were not detected. Continued research of this relationship is necessary.

The Moral Experience Questionnaire (MEQ) provided an enlightened view of the cadet perception of moral judgment growth at the Academy. The honor code system, peer and faculty interaction, the Philosophy 310 core course, reflection, leadership/decision responsibility, social interaction, discussion, and role-modeling all emerged as positive events/relationships in cadet moral judgment development. The restrictive Academy environment, peer pressure, poor role modeling, and institutional dogma emerged as key events/relationships that had a negative impact on cadet moral judgment growth.

Moral judgment comparisons of the USAFA Class of 1999 with other college samples revealed similarities and differences. USAFA cadets are just like other college-aged cohorts in their shift from conventional to principled moral judgment during college attendance. Cadets were also similar to other college samples in the types of significant moral judgment experiences they identified on open-ended questionnaires.

Unlike the majority of college DIT samples, differences in DIT scores by gender were apparent in the USAFA sample. There were no gender differences in DIT scores at entry, however, females had significantly higher DIT scores at

exit. Just as Ginovsky (1985) reported that female cadets in the USAFA Class of 1980 outperformed male cadets in many performance areas, Class of 1999 females had higher DIT scores than male cadets. This result suggests that female cadets may interpret the Academy experience differently from their male counterparts with relationship to a shift from conventional to principled moral judgment. A contributing factor to these DIT differences could be that females typical constitute twelve to fifteen percent of the each cadet class. Being outnumbered by males, females may work harder to prove themselves in the male-dominated environment or reflect more often on Academy experiences in order to extract lessons. At this point, one can only speculate as to what factors contributed to females outperforming males on the DIT. This research, however, strongly suggests that females interpret the Academy program differently from male cadets with relationship to moral judgment development. Further research should investigate how females interpret the Academy program differently than males.

A significant experiential difference identified in this study was the prominence of the USAFA honor code in the Academy college experience as identified by cadets on the MEQ. No other study reviewed by the researcher indicated that an institutional honor code had a significant effect on student moral judgment development. The only moral judgment study that reported on an institutional honor code was Rice's (1986) study conducted at the Air Force Academy. His study used a checklist questionnaire which resulted in only four

percent of the cadets identifying the honor code as a significant factor in moral judgment development. The identification of the USAFA honor code on the MEQ was significant because it was an open-ended questionnaire which did not prompt subjects to identify any specific experience. The USAFA honor code was the most commonly identified USAFA experience that contributed to cadet moral judgment development. This result indicates that an active and viable honor code system can have a significant perceived effect on college student moral judgment development. A living honor code system which permeates all aspects of an institution can provide role-taking, reflection, and learning opportunities for students to employ their moral reasoning. Further research still needs to be conducted to determine which honor code experiences contribute to moral judgment development and which experiences restrict moral judgment development.

Moral judgment development at the USAF Academy remains a complicated construct. The intent of this study was to provide insight into cadet development of principled moral judgment and important moral reasoning experiences. The results of this study will be useful to researchers and Academy officials as they continue to pursue ways of enhancing development of moral judgment during the college experience.

APPENDIX A

DEFINING ISSUES TEST

DIT

DEFINING ISSUES TEST
University of Minnesota
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Opinions about Social Problems

The purpose of this questionnaire is to help us understand how people think about social problems. Different people have different opinions about questions of right and wrong. There are no "right" answers to such problems in the way that math problems have right answers. We would like you to tell us what you think about several problem stories.

You will be asked to read a story from this booklet. Then you will be asked to mark your answers on a separate answer sheet. More details about how to do this will follow. But it is important that you fill in your answers on the answer sheet with a #2 pencil. Please make sure that your mark completely fills the little circle, that the mark is dark, and that any erasures that you make are completely clean.

The Identification Number at the top of the answer sheet may already be filled in when you receive your materials. If not, you will receive special instructions about how to fill in that number.

In this questionnaire you will be asked to read a story and then to place marks on the answer sheet. In order to illustrate how we would like you to do this, consider the following story:

FRANK AND THE CAR

Frank Jones has been thinking about buying a car. He is married, has two small children and earns an average income. The car he buys will be his family's only car. It will be used mostly to get to work and drive around town, but sometimes for vacation trips also. In trying to decide what car to buy, Frank Jones realized that there were a lot of questions to consider. For instance, should he buy a larger used car or a smaller new car for about the same amount of money? Other questions occur to him.

We note that this is not really a social problem, but it will illustrate our instructions. After you read a story you will then turn to the answer sheet to find the section that corresponds to the story. But in this sample story, we present the questions below (along with some sample answers). Note that all your answers will be marked on the separate answer sheet.

First, on the answer sheet for each story you will be asked to indicate your recommendation for what a person should do. If you tend to favor one action or another (even if you are not completely sure), indicate which one. If you do not favor either action, mark the circle by "can't decide."

Second, read each of the items numbered 1 to 12. Think of the issue that the item is raising. If that issue is important in making a decision, one way or the other, then mark the circle by "great." If that issue is not important or doesn't make sense to you, mark "no." If the issue is relevant but not critical, mark "much," "some," or "little" --depending on how much importance that issue has in your opinion. You may mark several items as "great" (or any other level of importance) -- there is no fixed number of items that must be marked at any one level.

Third, after you have made your marks along the left hand side of each of the 12 items, then at the bottom you will be asked to choose the item that is the most important consideration out of all the items printed there. Pick from among the items provided even if you think that none of the items are of "great" importance. Of the items that are presented there, pick one as the most important (relative to the others), then the second most important, third, and fourth most important.

SAMPLE ITEMS and SAMPLE ANSWERS:

FRANK AND THE CAR: ● buy new car 0 can't decide 0 buy used car

Great Some No
 Much Little

-
- | | | | | | |
|---|---|---|---|---|--|
| 0 | 0 | 0 | 0 | ● | 1. Whether the car dealer was in the same block as where Frank lives. |
| ● | 0 | 0 | 0 | 0 | 2. Would a used car be more economical in the long run than a new car. |
| 0 | 0 | ● | 0 | 0 | 3. Whether the color was green, Frank's favorite color. |
| 0 | 0 | 0 | 0 | ● | 4. Whether the cubic inch displacement was at least 200. |
| ● | 0 | 0 | 0 | 0 | 5. Would a large, roomy car be better than a compact car. |
| 0 | 0 | 0 | 0 | ● | 6. Whether the front connibillies were differential. |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|
| Most important item | 0 | 0 | 0 | 0 | ● | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Second most important | 0 | ● | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Third most important | 0 | 0 | ● | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fourth most important | ● | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note that in our sample responses, the first item was considered irrelevant; the second item was considered as a critical issue in making a decision; the third item was considered of only moderate importance; the fourth item was not clear to the person responding whether 200 was good or not, so it was marked "no"; the fifth item was also of critical importance; and the sixth item didn't make any sense, so it was marked "no".

Note that the most important item comes from one of the items marked on the far left hand side. In deciding between item #2 and #5, a person should reread these items, then put one of them as the most important, and the other item as second, etc.

Here is the first story for your consideration. Read the story and then turn to the separate answer sheet to mark your responses. After filling in the four most important items for the story, return to this booklet to read the next story. Please remember to fill in the circle completely, make dark marks, and completely erase all corrections.

HEINZ AND THE DRUG

In Europe a woman was near death from a special kind of cancer. There was one drug that doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost to make. He paid \$200 for the radium and charged \$2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about \$1,000, which is half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and began to think about breaking into the man's store to steal the drug for his wife. Should Heinz steal the drug?

ESCAPED PRISONER

A man had been sentenced to prison for 10 years. After one year, however, he escaped from prison, moved to a new area of the country, and took on the name of Thompson. For eight years he worked hard, and gradually he saved enough money to buy his own business. He was fair to his customers, gave his employees top wages, and gave most of his own profits to charity. Then one day, Mrs. Jones, an old neighbor, recognized him as the man who had escaped from prison eight years before, and whom the police had been looking for. Should Mrs. Jones report Mr. Thompson to the police and have him sent back to prison?

NEWSPAPER

Fred, a senior in high school, wanted to publish a mimeographed newspaper for students so that he could express many of his opinions. He wanted to speak out against the use of the military in international disputes and to speak out against some of the school's rules, like the rule forbidding boys to wear long hair.

When Fred started his newspaper, he asked his principal for permission. The principal said it would be all right if before every publication Fred would turn in all his articles for the principal's approval. Fred agreed and turned in several articles for approval. The principal approved all of them and Fred published two issues of the paper in the next two weeks.

But the principal had not expected that Fred's newspaper would receive so much attention. Students were so excited by the paper that they began to organize protests against the hair regulation and other school rules. Angry parents objected to Fred's opinions. They phoned the principal telling him that the newspaper was unpatriotic and should not be published. As a result of the rising excitement, the principal ordered Fred to stop publishing. He gave as a reason that Fred's activities were disruptive to the operation of the school. Should the principal stop the newspaper?

| | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|
| Most important item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Second most important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Third most important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Fourth most important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

| | |
|-----------|---|
| ○ ○ ○ ○ ○ | 1. Hasn't Mr. Thompson been good enough for such a long time to prove he isn't a bad person? |
| ○ ○ ○ ○ ○ | 2. Everytime someone escapes punishment for a crime, doesn't that just encourage more crime? |
| ○ ○ ○ ○ ○ | 3. Wouldn't we be better off without prisons and the oppression of our legal system? |
| ○ ○ ○ ○ ○ | 4. Has Mr. Thompson really paid his debt to society? |
| ○ ○ ○ ○ ○ | 5. Would society be failing what Mr. Thompson should fairly expect? |
| ○ ○ ○ ○ ○ | 6. What benefits would prisons be apart from society, especially for a charitable man? |
| ○ ○ ○ ○ ○ | 7. How could anyone be so cruel and heartless as to send Mr. Thompson to prison? |
| ○ ○ ○ ○ ○ | 8. Would it be fair to all the prisoners who had to serve out their full sentences if Mr. Thompson was let off? |
| ○ ○ ○ ○ ○ | 9. Was Mrs. Jones a good friend of Mr. Thompson? |
| ○ ○ ○ ○ ○ | 10. Wouldn't it be a citizen's duty to report an escaped criminal, regardless of the circumstances? |
| ○ ○ ○ ○ ○ | 11. How would the will of the people and the public good best be served? |
| ○ ○ ○ ○ ○ | 12. Would going to prison do any good for Mr. Thompson or protect anybody? |

| | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|
| Most important item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Second most important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Third most important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Fourth most important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

PLEASE DO NOT WRITE IN THIS BOX

703882

| | | | | | NEWSPAPER: <input type="radio"/> Should stop it <input type="radio"/> Can't decide <input type="radio"/> Should not stop it | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|-----------------------|---|
| | GREAT | MUCH | SOME | LITTLE | NO | | |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1. | Is the principal more responsible to students or to parents? |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 2. | Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time? |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 3. | Would the students start protesting even more if the principal stopped the newspaper? |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 4. | When the welfare of the school is threatened, does the principal have the right to give orders to students? |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 5. | Does the principal have the freedom of speech to say "no" in this case? |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 6. | If the principal stopped the newspaper would he be preventing full discussion of important problems? |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 7. | Whether the principal's order would make Fred lose faith in the principal. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 8. | Whether Fred was really loyal to his school and patriotic to his country. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 9. | What effect would stopping the paper have on the student's education in critical thinking and judgment? |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 10. | Whether Fred was in any way violating the rights of others in publishing his own opinions. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 11. | Whether the principal should be influenced by some angry parents when it is the principal that knows best what is going on in the school. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 12. | Whether Fred was using the newspaper to stir up hatred and discontent. |
| | | | | | | Most important item | 1 2 3 4 5 6 7 8 9 10 11 12 |
| | | | | | | Second most important | 1 2 3 4 5 6 7 8 9 10 11 12 |
| | | | | | | Third most important | 1 2 3 4 5 6 7 8 9 10 11 12 |
| | | | | | | Fourth most important | 1 2 3 4 5 6 7 8 9 10 11 12 |

| | | | | | DOCTOR'S DILEMMA: <input type="radio"/> He should give the lady an overdose that will make her die <input type="radio"/> Can't decide <input type="radio"/> Should not give the overdose | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|-----------------------|--|
| | GREAT | MUCH | SOME | LITTLE | NO | | |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1. | Whether the woman's family is in favor of giving her the overdose or not. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 2. | Is the doctor obligated by the same laws as everybody else if giving an overdose would be the same as killing her. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 3. | Whether people would be much better off without society regimenting their lives and even their deaths. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 4. | Whether the doctor could make it appear like an accident. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 5. | Does the state have the right to force continued existence on those who don't want to live. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 6. | What is the value of death prior to society's perspective on personal values. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 7. | Whether the doctor has sympathy for the woman's suffering or cares more about what society might think. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 8. | Is helping to end another's life ever a responsible act of cooperation. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 9. | Whether only God should decide when a person's life should end. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 10. | What values the doctor has set for himself in his own personal code of behavior. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 11. | Can society afford to let everybody end their lives when they want to. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | 12. | Can society allow suicides or mercy killing and still protect the lives of individuals who want to live. |
| | | | | | | Most important item | 1 2 3 4 5 6 7 8 9 10 11 12 |
| | | | | | | Second most important | 1 2 3 4 5 6 7 8 9 10 11 12 |
| | | | | | | Third most important | 1 2 3 4 5 6 7 8 9 10 11 12 |
| | | | | | | Fourth most important | 1 2 3 4 5 6 7 8 9 10 11 12 |

PLEASE DO NOT WRITE IN THIS AREA

APPENDIX B

MORAL EXPERIENCE QUESTIONNAIRE

Moral Experience Questionnaire (MEQ)

Purpose: This questionnaire is designed to obtain input on the USAFA and non-USAFA experiences that cadets perceive contributed to or restricted their development of moral judgment. The information will only be used for research purposes and will not be used to identify individual cadets. The information provided will be analyzed by the researcher to determine common experiential themes in cadet responses. Your responses remain confidential and will only be analyzed by the primary researcher. No personal identifier is required for this questionnaire--your responses remain anonymous. Providing demographic information related to gender and MAS course enables the researcher to conduct group analysis.

Instructions: This questionnaire contains short, open-ended questions concerning your perception of USAFA and non-USAFA events that contributed to or restricted your development of moral judgment during your attendance at USAFA. Please limit your responses to experiences you have had since entering the Academy as a basic cadet. Please provide specific and complete responses to the questions if they are relevant. Use the back of the form for additional space if necessary. No personal identification is required on the MEQ. Since it is an open-ended questionnaire, do not include any names or other personal identification language that could be used to determine your identity. Specific responses that are void of names and other identifying characteristics supports anonymity and confidentiality of responses.

1. Military Art and Science Course Assignment (check one)

☐ MAS 440
☐ MAS 472

2. Gender (check one)

☐ Male
☐ Female

3. Has your attendance at the USAF Academy contributed to your ability to reason through moral dilemmas? (check one)

☐ Yes
☐ No

4. What Academy experiences (if any) contributed to your ability to reason through moral issues?

How?

5. During your attendance at USAFA, what non-Academy experiences contributed to your ability to reason through moral issues?

How?

6. Did any USAFA or non-USAFA experiences restrict your ability to reason through moral issues?

How?

7. How did the Academy faculty and staff contribute to your ability to reason through moral issues?

8. How did your peers/fellow cadets contribute to your ability to reason through moral issues?

Inquiries concerning this questionnaire should be directed toward Major Chris Luedtke at (850) 668-6155.

APPENDIX C

USAF ACADEMY CADET INFORMED CONSENT FORM

Dear USAFA Class of 1999 Cadet,

8 Jan 1999

I am an active duty Air Force Major previously assigned to the Academy working on a Ph.D. sponsored by the Dean of Faculty and the USAF Academy. I am working under the direction of Professor Barbara Mann in the College of Education at Florida State University. I am conducting a research study to determine if the moral judgment used by cadets changes over four years of attendance at USAFA, if cadet moral judgment differs based on year of attendance at USAFA, and determining what experiences cadets identify as impacting their moral judgment.

I am requesting your participation, which involves completing two instruments designed to obtain information related to moral judgment. The Defining Issues Test (DIT) consists of a limited number of social dilemmas which then require that you rank and rate a selection of considerations based on what you determine is important. The Moral Experience Questionnaire (MEQ) consists of five open-ended questions requesting inputs on the moral reasoning experiences that you have faced. Completion of the instruments should take 50 minutes or less.

Your social security number (SSAN) is requested on the DIT in order to facilitate analysis of results by comparing DIT responses to selected demographic variables maintained in Academy archives. These variables include gender, age, home of record, MPA, GPA, entry waiver status, prep school status, cadet leadership positions, prior military service, and whether either of your parents were Academy graduates. Group analysis of all cadet DIT scores will be accomplished to determine if relationships exist between demographic variables and DIT scores. In order to facilitate confidentiality with the DIT responses, a third party process will be utilized to extract variables from Academy archives. The researcher will be the only individual who can match DIT scores to SSAN identifiers. Demographic information will be requested from USAFA/XPR using the SSAN. Using the third party process, the researcher is only provided access to approved demographic variables and will not have knowledge of the cadet's name. At the same time, USAFA agencies will not be able to relate cadet SSANs back to DIT scores. Once demographic variables have been matched to DIT scores, SSANs will be destroyed by the researcher to prevent subsequent identification. Your responses on the MEQ remain anonymous.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty--it will not affect your grade or cadet standing. Results of the research study may be published, but your name will not be used.

If you have any questions on the research study, please contact me in the 34th Education Squadron at 333-3255.

I thank you for your participation in this important study.

Sincerely,



CHRISTOPHER J. LUEDTKE, Major, USAF
Air Force Institute of Technology, Florida State University

CADET CONSENT TO BE A RESEARCH SUBJECT FOR THE PROJECT: A Longitudinal and Qualitative Descriptive Study of Cadet Moral Judgment Development at the United States Air Force Academy.

1. The project was described to me by Major Christopher J. Luedtke who is a doctoral candidate at Florida State University. I understand the purpose of his research is to better understand cadet moral reasoning development at the Air Force Academy. I have had the time and opportunity to ask questions about the project and about being a subject, and have no more questions at this time.
2. I understand that I will be asked to fill out a paper and pencil Defining Issues Test which requires me to read short social dilemmas and then rank and rate a number of considerations deemed relevant to reasoning through the dilemma. I will also be asked to fill out a short paper and pencil Moral Experience Questionnaire soliciting inputs on the relevance of my own moral reasoning experiences. The Defining Issues Test (DIT) and Moral Experience Questionnaire (MEQ) will be administered during the current MAS 440 or MAS 472 period and should not take longer than 50 minutes to accomplish.
3. I understand that I will need to provide my social security number in the spaces provided on the DIT. My SSAN will only be used to match demographics (gender, age, home of record, MPA, GPA, entry waiver status, prep school status, cadet leadership positions, prior military service, and whether either of your parents were Academy graduates) with my responses for group-level analysis. These results will in no way affect my standing as a cadet and is for research purposes only. All of my answers to the questions will be kept confidential. My name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported. No personal identification is required on the MEQ. The questionnaire is designed to identify experiences that cadets deem important to their moral reasoning development. Since it is an open-ended questionnaire, cadets have an opportunity to elaborate on their experiences. I understand that I am not to include any identification of specific language that could be used to identify me. I understand that all responses on the MEQ will be anonymous and confidential with the following exception: If I provide information that I have violated the Uniform Code of Military Justice (UCMJ) or civil law, or of an Honor Code violation that has not previously been reported and I also divulge my personal identity, that information will be reported to appropriate authorities.
4. I understand that there is risk that confidential information about me will be released and have a negative effect on me. I also understand that the researchers will do everything they can to keep that from happening to include using third-party procedures where no person or agency can link cadet responses with an actual cadet name.
5. I understand that I will not receive anything for being a subject. The results of this research will be made available through the USAFA Office of Institutional Research.
6. I understand that researchers may tell me to stop being a subject, and that they will tell me why if the problem is a medical one.
7. I understand that Federal regulations (45 CFR 46.116) say that I can stop being a subject at anytime without any negative action against me by the researchers or by my supervisors. I also understand that the researchers do not want me to stop unless my reasons are important.
8. I understand that Federal law, including the Privacy Act, places strict limitations on any use of my name, social security number, or other personal information. This type of information generally cannot be released outside of the Department of Defense.
9. I understand that being a subject will not make me lose any benefits to which I am entitled.
10. I understand that questions I think of later about being a subject can be answered by:

The principal investigator: Major Christopher Luedtke, 5359 Tewkesbury Trace, Tallahassee, FL 32308, (850) 668-6155
USAFA Institutional Research: Lt Col Asiu, USAFA/XPR, 2304 Cadet Dr, Ste 300, USAF Academy CO 80840, (719) 333-2587
The Judge Advocate: Lt Col Asiu, USAFA/XPR, 2304 Cadet Dr, Ste 300, USAF Academy CO 80840, (719) 333-2587

11. No one has forced me or coerced me to be a subject nor intimidated me about being a subject.
12. I am volunteering to be a subject in this study.

Date: _____

Subject name (print): _____

Subject signature: _____

Researcher name (print): Christopher J. Luedtke, Major, USAF

Researcher signature: 

Witness name (print): _____

Witness signature: _____

APPENDIX D

USAF ACADEMY ACADEMY, FLORIDA STATE UNIVERSITY, AND USAF
SURGEON GENERAL HUMAN SUBJECTS RESEARCH APPROVALS

MEMORANDUM FOR HQ USAFA/CV

FROM: HQ USAFA/XP

SUBJECT: Minutes of the USAFA Institutional Review Board (IRB) Meeting

1. **MEETING:** 5 November 1998, 1140, HQ USAFA/DFBL conference room
2. **ATTENDANCE:** A quorum was present and minimum representation requirements were met with the following members in attendance:

| | |
|---|---------------------------|
| Dr. James C. Miller, HQ USAFA/DFE | (Chair) |
| Lt Col Bernard W. Asiu, HQ USAFA/XPR | (Institutional Policy) |
| Lt Col Leray L. Leber, HQ USAFA/XPR | (Institutional Policy) |
| Chaplain, Lt Col, Gary L. Carlson, HQ AFSPC | (Nonaffiliated Community) |
| Dr. Michael J. Wilcox, HQ USAFA/DFB | (Scientist) |

Also in attendance was SSgt Gary Lefko, HQ USAFA/XPR, to train members in the use of the IRB Discussion Board.

3. **STANDARD AGENDA ITEMS:**

a. IRB Training:

Colonel Asiu provided training on the requirements for informed consent document review (slides at atch 1). He also reviewed the IRB Review Criteria Checklist (atch 2). Sergeant Lefko gave training on the use of the IRB discussion board (atch 3) developed for the electronic discussion of protocols and IRB policy issues. Dr. Miller recommended a web site, www.nih.gov/grants/oprr/irb/irb_guidebook.htm, which is linked to the USAFA human subjects web site.

b. Old Business:

(1) Colonel Asiu is awaiting data from AFMOA/SGOT to confirm the AFMOA SPA numbers.

(2) The thank you letters for Lieutenant Colonel Barad and Major Bradshaw are under coordination for HQ USAFA/CC signature.

(3) The pulmonology consult for Oxygen Mask Research, FAC1998004H, is being provided by Dr. John Mitchell from Travis AFB.

c. New Business:

(1) Discussion of the e-mail IRB reviews for five protocols:

(a) FAC1998005H, A Longitudinal and Qualitative Descriptive Study of Cadet Moral Judgment Development at the USAFA. Categorized as minimal risk. Received conditional approval pending 1) changes to procedures to insure voluntary participation during classroom testing and 2) modification of the ICD to indicate that information related to violation of the UCMJ, civil law or the honor code will be reported to authorities.

(b) FAC1998006H, Cadet Cynicism. Categorized as minimal risk. Received conditional approval pending minor changes to the ICD (e.g., correct missing words, change POC from HQ USAFA/JA to HQ USAFA/XPR).

(c) FAC1998007H, Assessing USAFA's Effectiveness in Preparing Graduates for the Uniformed Services University of the Health Sciences. Categorized as exempt under 45 CFR 46, 46.101.b.4 (collection of existing data). Final determination of exempt status is the responsibility of AFMOA since the USAFA IRB does not have this authority under the Single Project Assurance.

(d) FAC1998008H, Eye Tracking Behavior During VFR Navigation. Categorized as minimal risk. Received conditional approval pending revision of protocol 1) to indicate that research participants will be drawn using procedures from the DFBL research participant pool and 2) that subject data will be recorded without individual identifying information such as name or SSA.3

(e) FAC1998009H, Is There a Right and Wrong Way of Thinking. Categorized as minimal risk. Received conditional approval pending revision of the protocol to 1) to indicate that research participants will be drawn using procedures from the DFBL research participant pool and 2) that subject data will be recorded without individual identifying information such as name or SSAN.

(2) Principal Investigator Captain Michael Ross informally discussed two research protocols not yet distributed to the IRB (anterior cruciate ligament reconstruction and hamstring muscle injury). Formal action on these protocols was deferred until all members have an opportunity to review the research.

(3) Principal Investigator Dr. William Hendrix informally discussed his sexual harassment perceptions protocol not yet distributed to the IRB. Formal action was deferred until all members have the opportunity to review the research.

(4) E-mail IRB review comments regarding the DFBL research participant pool were summarized. The item was deferred for further discussion due to lack of time.

d. Annual Reviews:

Colonel Asiu presented the annual review of FAC 1998001H, Effects of Glutamine Feeding Upon The Incidence of Infection in Air Force Personnel Undergoing Intensive Training. Data collection is complete but data analysis is still in progress. Twenty-seven subjects entered the study and 20 subjects completed the study. There were no unusual reasons for subject attrition. The progress report was accepted by the IRB. The final report is expected in December 1998.

4. **ADJOURNMENT:** 1330

5. **NEXT MEETING:** 14 December 1998, 1130, HQ USAFA/DFBL conference room.

-signed-
JAMES C. MILLER, PhD
Chairman, Institutional Review Board

-signed-
BERNHARD W. ASIU, Lt Col, USAF
Administrator, Institutional Review Board

I approve/disapprove the actions of the IRB IAW AFI 40-402, para 5.4, *Using Human Subjects in Research, Development, Test, and Evaluation*.

-signed-
BRIAN A. BINN, Col, USAF
Vice Superintendent

Attachments:

1. Requirements for Informed Consent
Document Review
2. IRB Review Criteria Checklist
3. IRB Discussion Board



Office of the Vice President
for Research
Tallahassee, Florida 32306-2811
(850) 644-5260 • FAX (850) 644-4392

APPROVAL MEMORANDUM

from the Human Subjects Committee

Date: October 9, 1998

From: Jack Brigham, Chair *JBH*

To: Christopher J. Luedtke
5359 Tewkesbury Trace
Tallahassee, FL 32308

Dept: Educational Leadership

Re: Use of Human subjects in Research
Project entitled: A Longitudinal and Cross-Sectional Descriptive Study of Cadet
Moral Judgment at the United States Air Force Academy

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be exempt per 45 CFR § 46.101(b)2 and has been approved by an accelerated review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals which may be required.

If the project has not been completed by October 9, 1999 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. Also, the principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is M1339.

cc: B. Mann
human/newapp.doc
APPLICATION NO. 98.333

Return-Path: <BattMR.XP.USAFA@usafa.af.mil>
Date: Thu, 17 Jun 99 16:32:34 MST
To: <cjl1442@garnet.acns.fsu.edu>
From: "Mona R Batt, XPR, 2587" <BattMR.XP.USAFA@usafa.af.mil>
Reply-To: <BattMR.XP.USAFA@usafa.af.mil>
Errors-to: <BattMR.XP.USAFA@usafa.af.mil>
Subject: fwd: SGROC Approval of Protocol FAC19980013H
X-Incognito-SN: 552
X-Incognito-Version: 4.11.23

Chris,

This is the AFMOA approval of your protocol. Also, your FAC number has changed from 19980005 to 19980013H.

Ruth

----- Original Text -----

From: "Casto Darlene" <Darlene.Cast@USAFSG.Bolling.af.mil>, on 4/8/99 12:55 PM:
To: SMTP@df04@Servers["Lt Col Bernard Asiu (Business Fax)" <IMCEAFAX-Lt+20Col+20Bernard+20Asiu+40+2B1+20+28719+29+20333-3263+20+20@USAFSG.Bolling.af.mil>], battmr@xp@USAFA, MillerJC@DFE@USAFA

The Surgeon General's Research Oversight Committee (SGROC) concurred with the following minimal risk protocol and informed consent document on this date:

FAC19980013H, "A Longitudinal and Qualitative Descriptive Study of Cadet Moral Judgment Development at the USAFA"

To assist in the proper accomplishment of the study you should assure compliance with AFI 40-403, Clinical Investigation in Medical Research Guidance and Procedures, as it pertains to annual progress reports, final reports, proper maintenance of records, and the application of written informed consent to all study participants.

Additionally, Single Project Application #50042 has been approved for this project.

Protocol related questions may be addressed to the undersigned.

Darlene G. Casto
DARLENE G. CASTO
Research Program Manager
Clinical and Biomedical Research & Dev Div
Air Force Medical Operations Agency
Office of the Surgeon General
Phone (202) 767-4338 (DSN 297)
Air Force Clinical and R&D Homepage
<http://usafsg.satx.disa.mil/~moasgot/>
<<http://usafsg.satx.disa.mil/~moasgot/index.htm>>

APPENDIX E

DEFINING ISSUES TEST (DIT) COPYRIGHT APPROVAL FROM JAMES REST

**CENTER for the study of
ETHICAL DEVELOPMENT**

University of Minnesota

James Rest, Research Director / 206-A Burton Hall / 178 Pillsbury Drive SE / Minneapolis, MN 55455 / (612) 624 0876 / FAX: (612) 624-8241
Muriel Bebeau, Education Director / 15136 Moos Tower / Health Ecology / 515 Delaware Street SE / Minneapolis, MN 55455 / (612) 625-4633
Darcia Narvaez, Executive Director / 125G Peik Hall / 159 Pillsbury Drive SE / Minneapolis, MN 55455 / (612) 627-7306

Tuesday, September 08, 1998

Mr. Christopher Luedtke
5359 Tewkesbury Trace
Tallahassee, FL 32308

Dear Mr. Luedtke:

I grant you permission to use the Defining Issues Test in your current study. If you are making copies of the test items, please include the copyright information on each copy (e.g., Copyright, James Rest, 1979, All Rights Reserved).

I also grant you permission to reprint the Defining Issues Test as an appendix in your dissertation or report for publication. This includes the stories and test items, but not the scoring key or stage designations for specific items. Please make sure that the copy contains the usual copyright information. I understand that copies of your dissertation may be duplicated for distribution.

Please send me a copy of the report of your study. Thanks for your interest in the Defining Issues Test.

Sincerely,



James Rest
Professor
Educational Psychology

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BIOGRAPHICAL SKETCH

Christopher J. Luedtke is an officer in the United States Air Force. He graduated from the United States Air Force Academy in 1987 with a Bachelor of Science degree in Military History. His initial assignments on active duty included duties as an accounting and finance officer. He completed his Masters degree in Public Administration from Troy State University in 1991.

In 1993, he was assigned to the United States Air Force Academy as an instructor of Military Art and Science with a focus on military theory, leadership, and professional ethics. From 1993 to 1996, he served as the course director of numerous core and elective Military Art and Science courses. As an educator at the Academy, he focused most of his academic and professional interests on the leadership and moral development of Academy cadets. The USAF Academy selected him for academic promotion to assistant professor in 1995. In 1996, he was selected as the Outstanding Academy Educator for his superior teaching.

He was sponsored by the United States Air Force to obtain a Ph.D. from Florida State University. While at FSU, he focused his research on moral and ethical development while completing a major in Higher Education and a minor in Instructional Systems Design. He conducted research for the John Templeton Foundation on the annual honor role of character building colleges and universities. His research findings led to the identification and implementation of new selection criteria for the prestigious honor roll. He presented at the annual FSU Institute on College Student Values. He obtained a certification in college teaching from Florida State University in 1998. In 1999, he was inducted into the Phi Kappa Phi honor society.

Upon completion of his doctorate at Florida State University, he was reassigned to Headquarters, United States Air Forces Europe where he was to be responsible for basing and international affairs issues with host countries. After his tour in Europe, Major Luedtke will return to the Air Force Academy faculty.